

Profit and Pleasure United,
OR THE
Husbandman's Magazine.

BEING

A most Exact Treatise of *Horses, Mares, Colts, Bulls, Oxen, Cows, Calves, Sheep, Swine, Goats,* and all other Domestick Cattle, serviceable, profitable, or usefull to Man: With Directions for their *Breeding and Ordering*: Rules to be Observed in *Buying Cattle*, and preventing such Distempers as are Incident to them; and Approved Cures for all such Distempers, both Internal and External, as frequently afflicts them, with speed and inconsiderable Charge: Together with easie and plain Rules and Methods for Improving *Arable and Pasture-Lands*, and the like: Improving most sorts of *Grain* to the best advantage; and what is necessary to be Observed in *Sowing and Harvesting*: the Management, Improvement and Preservation of *Fruit-Trees, Plants and Flowers*: The Manner of Ordering *Flax, Hemp, Saffron and Licrish*: With Directions for the Increasing and Preserving of *Bees*, and many other things of the like Nature.

To which is added

The Art of *Angling, Hunting, Hawking*, and the Noble Recreation of *RINGING*. And Making *Fire-works*.

The Whole Elusterated with Copper Cuts.

By J. S.

LONDON, Printed for S. Lee at the Feathers in Lombard-street. And Andr. Thorncome, at the Golden Leg, on London-Bridge. 1684.

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SINCE there is nothing more Usefull then Husbandry, and that on the well management of Rural affairs, the welfare of Kingdoms and States mostly depend; I conceived it a necessary duty which I owe to my Country, to give my Countrymen such Directions, as may be a means more and more to Improve their honest Labour and Industry; for certain it is, success gives men Encouragement to search into hidden secrets, and by degrees to effect such things, as before appeared exceeding difficult, if not altogether impossible. Then, to avoid rebuke with the sloathfull servant, that hid his Talent in a Napkin, with the divine permission, I have proceeded to unravel the whole Mystery of Husbandry, in all its material Circumstances, not omitting any thing that may be any way conducing

to the profit and pleasure of my honest Country Associates, with whose Rural discourse and pastime my self have been so often delighted, and gained not a little Experience, which Improved by Study, has arrived to such perfection, that I doubt not but I shall now return it with Interest, to the satisfaction of those, for whose Sake I made the Improvement, not in the least mistrusting, but that it will as greatly redound to the advantage of those that will make it their Guide in Rural affairs, as it has done to him, who is Reader.

Your Friend and Countryman,
to serve you,

J. S.

T H E



THE
HUSBANDMAN'S
MAGAZENE.

CHAP. I.

Of Bulls, Cows, Calves, &c.

1. *How to know when your Cow is desirous of the Bull; and what is Necessary to be Observed before and after her Conception and Calving.*
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SINCE there is no one Creature more Usefull and Profitable to mankind, than is the Cow, or Kine, as some call her; and that by her the Calf, Male and Female, is brought forth

forth, and disposed of at the discretion of the Owner. I shall begin my Book of Husbandry, with Necessary Rules to be Observed in her taking the Bull, conceiving and bringing forth, &c.

The best time to permit your Cow to have the company of the Bull, is at three years old ; or if it be something more, it matters not, but by no means younger; for if so, it will not only hinder her Growth, but Infeeble her for the future, and cause her to produce weaklings, or unhealthy Calves ; nor is your Cow after twelve years fitting to be covered, especially if you intend your Calf for an Ox or Cow ; for at that Age nature being decayed, and much impaired in the Cow, her product will prove runts, or unhealthy, imperfect, and unsound.

The best time to turn your Cow to the Bull, is from the tenth of *May*, to the tenth of *June* ; for then, besides her liveliness and good estate of body, by feeding on flowers and other invivifying Aliments, she will bring forth her Calf in a warm season.

If you would know when your Cow is desirous of the Bulls company, take these
three

three Observations as Infallible : First, by the swelling of her Claws, occasioned by the heat created by desire. Secondly, her continual Lowing, and desire to make out of the Ground, by running to the Hedge and Bank, when she hears her self Answered, or sees any Cattle of the same kind pass by, though at a great distance. Thirdly, by her looking up towards the Sky, end snuffing up the Wind, as if she scented the Bull.

Either of the foresaid symptoms observed, she being put into a fair and fresh pasture, turn the Bull to her, and she will soon receive him ; if you propose a Breed, then look well to the limbs and proportion of your Bell ; above all colours, Red is counted the best to rear a Stock, let him be sprightly and young, not exceeding five years, his body long, his neck and horns thick and short, his front broad and curling, his eyes lively and black, with a bushy, long, and whisking tail, and the rest of his Limbs proportionable, without disproportion, or other imperfection. If the Bull seem averse, and refuse to leap her, or the Cow be not greatly desirous, you should smoke them with an Herb called *Hearts tail* : and it will provoke them to effect.

effect it, or by rubbing a sponge over with Cowitch, or Nettle-seeds, and rubbing the Cows sheath with it, holding it to the Bulls nose, Sea-onions, soufed, will work the same effect.

When you find she has conceived, which she will after twice or thrice being Leapt, then put her into a close Pasture, warme, and well fenced; for if she Leaps, she will be apt to lose what she retaines; or if her Calf be come to any Perfection, cast it untimely; You must so order it likewise, that she do not race herself amongst thorns, briars, or the like; and let her drink, if your Pasture will afford it, out of a clear Spring, or running-water; but by no means let the water be foul, or muddy. There are some that are of opinion, that if at the time your Cow is Leaped, you set a Calf before her, she will bring forth a Calf of the same colour. And thus much concerning Cows, for the present; and from the Cow, I shall proceed to the Calf.

2. *What Order ought to be taken with the Calf, before weaning, at weaning, and after weaning.*

That it is at the choice of the Husbandman to have a Cow, or a Bull-calf at pleasure;

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sure, many are of opinion: and for that
give two reasons; the one is, to oblige
the Bull to come off on the left side, if you
would have a Cow-Calf; and on the right
for a Bull-Calf; the other is to knit the
left stone of the Bull for the former, and
the right stone for producing the latter:
But in my opinion, these directions, if not
Fabulous, are uncertaine, and without any
true ground, therefore leaving them to
such as intend to Experiment u'm; I shall
proceed.

If you put a strange Calf to a Cow to
Suckel, be sure let it not rest with her all
night; for then, by the scent, she will better
perceive it not to be her own, than in the
daytime; and it is ten to one but she will
over-lay it.

At the end of two months, or ten weeks,
is a good time to wean your Calf, though
some wean them as soon as they are Cal-
ved, though others not till 3 months
old; if you wean them at first, you must
teach them to feed, by putting your fin-
ger in their mouths, whilst your hand is
in the Pail, which they taking to be their
Dams Teat-suck; and then lett the Milk
and Whey, be mixed with a little Bran,
which is the best thing you can give them

till

till they have gathered strength, at what
 time accoast them with a handful of
 sweet Hay, or new-cut Grass, which will by
 degrees prepare them for pasture ; but if
 you wean them at two months, you may, if
 the weather be warm, turn them into an
 adjoining Pasture, and give them their fill
 of milk and whey, not above twice a day ;
 or not more than once, if you perceive
 they addict themselves to feeding ; for if
 they have store of Milk, they will neglect
 feeding ; at 3 Months you may let them
 subsist altogether upon Grass, Hay, and now
 and then Bran, and Skim-milk, housing
 them every evening ; for if they be of ne-
 ver so large a Breed, if they be scantied in
 Pasture, or other food, and pinched with
 cold or wet, during their being tender,
 they will not come to that perfection
 which otherwise they would. If you per-
 ceive your sucking-Calf draw the teat
 painfully, and seem rather to mumble it,
 than to cause the Milk to efuse, then care-
 fully look under his tongue, and you
 will find white blisters growing on
 and restraining the tongue of its use ;
 the which with a as sharp knife, or sciz-
 ers, you must take away ; but with so light a
 hand, that you must not wound the tongue,
 and

and wash the place with Salt, and the Juice of Garlick; the which left undone not only causes the Calf to pine away, but often prove his death. Another thing that hinders your, Calf from thriving is Lice, and breaking out thereby; which to cure or prevent you must rub him over with Salt-butter, and once every day with a stronge wisp of Straw, or course Hay, and cleanse the place into which you put him.

3. *How, and at what time to Geld or Spay Calves, and how to use them thereupon, in order to their health, and thriving.*

To Cut or Geld your Calves, divers are the opinions relating to the time; some are for it at 3 months, some at a longer time; but if you intend to breed them to be Oxen, at two years is a convenient time for the Bull-calves; but if you design to Spay the Cow-calves, in order to fattening them, or otherwise then at 4 months is necessary, unless the weather be too hot, or too cold: but observe, that if it happen in the Spring, or fall, or at the wain of the Moon, or else deferred it longer: the best way for Gelding is, to take the stones between a clefted stick, and cutting them, leave so small a matter

matter fastned to the Sinews, or Ligaments that sustain them, as may cause the Calf to retain some vigor as well of the one as the other Progenitor. If you Spay your Cow-calf, diligently sew up the wound, always observing, that none of the Guts be stiched up with the Skin, and then anoint it with fresh-butter; or if you be carefull to keep the Wasps, Flies, or Bees from it, you may add to it a small quantity of Honey. As for the Bull-calves, great care must be taken, that after their Gelding they overstrain not themselves, for fear of bleeding to death, till they are perfectly well; and above all, observe to keep them from the Cow-calves, if they be of any bigness, for that they will be apt to leap them, and by that means endanger their own Lives: As for the wound, the best and speedy way to cure it, is to anoint it with Ashes of *Vine* and *Lythrage*, not suffering him the day after Cutting to drink at all, and for three days after receive no strong dyet, but only feed upon a small quantity, as his stomach will bear, most of which must consist of green boughs and new-cut grass, not too rank, with a moderate portion of drink for the two latter days. If I perceive the wound to be afflicted

afflicted be swelling, Flys, or other Insects, for the speedier cure thereof, you may anoint it with Tarr, the aforesaid Aines and Olive-oyl, for the space of three days; in which time the worst will be past as to danger of Life, except you permit your Calf so cut to catch cold; or if he be of capacity to leap any Cow-calf, if he attempt, it will cause him to bleed afresh.

4. *How to break your Steers or Heifers, and thereby the better to Improve them in feeding.*

Your Calf being grown up to a considerable Stature; if a Bull-Calf, is called a Steer; if a Cow-calf, a Heifer: the best way to break them of their wildness, is to put them into a Pasture adjoying to your Cow-house or stable, and out of your own hand daily give them some sweet Provinder, continually permitting your Cow-house or Stable-door to stand open for their going in or out at pleasure; their Stalls being indifferent large and clean kept, each Stall being made Yoke-wise, about seven foot from the ground; and if you find them wild, head-strong, or apt to do mischief with their horns, in a fair

fair day bring them up to their stalls, ty
 them thereto for the space of 24 hours
 without giving them any meat ; the which
 by once or twice using at different times,
 will make them so tame and gentle, that
 they will be glad to accept of such order-
 inst as you will bestow on them, and re-
 ceive with all familiarity such meat as
 you will give them ; the which, whilst
 they are eating, stroak them gently, and
 spirt into their mouths sweet wine,
 which will not only make them familiar,
 but oblige them to follow you, &c.
 When they are acquainted with you, rub
 their mouths with salt, and put down
 their throats, if you can oblige them to
 receive it ; Salt-butter or Tallow, two or
 three lumps, to the bigness of Walnuts ;
 and by so doing, they will become as tame
 as you can wish, and consequently thrive
 better by far than otherwise they would.
 And this is certainly the most expedient
 way, though some were wont to yoke
 them together, and make them draw as at
 a light Plough, or some other light
 weight, putting one of them yoke-mate
 with an Ox, used to that Labour ; and
 if he chance to lie down, bind his feet, and
 suffer him there to continue without meat
 for

for twenty hours, to break him of his fullness: But in my opinion, the former is far the better way for breaking them, and putting them into a good condition.

If the pasture be burnt up, or any other way become scarce, then bringing them into their stalls, and there feed them, either with Tears, sweet Chaff, short and sweet Hay, or with fine Pease-straw; but if none of them can be had, then use Clover-grass, after-grass, or Barly-straw, for this sort of food in winter; if they be kept warm, will not only nourish them, but greatly improve them; or you may give Lupins, Pease and Chaff mingled together; and in the Spring, green boughs of Elm, Ash, Oake, Holm or leaves of the Figtree or Vine.

5. *The most approved way speedily to Fat your Steers or Oxen; and how, during that time, they must be Ordered.*

If you design to Fat your Steers, Heifers or Oxen, having turned them into good Pasture, and twice a day, both Morning and Evening, give them their fills of Meal, Chaff and Rapes, or Grains, mixed together; and when they come up
to

to eat it, cast warm water upon them, wherein chopped Pease-straw has been soaked; and if at any time you perceive their Stomacks fail them, then steeping green Colword-leaves in Vinetger, give 'um them; and this will whet the appetite to that degree, that they will again roundly fall to their meat; and into your former Provinder, you may put a quantity of Wheat-bran, well sifted. In Winter, you must feed them at Break of day; and in Summer at Sun-rising. Twice a day you must be sure to Water them, viz. at Nine in the Morning, and at Three in the Afternoon: If in Winter, once a day with warm water, into which you may scatter a little fine Wheat-bran, to make it go down the better.

Their Stalls, especially in Winter, must be close and warm, paved with hard Stone, or floored with Gravel layed asloap, that so their water may either sink in, or pass away without anoying: As for Boards, they are nothing near so convenient, by reason of their uncertainness, and the noisome smell they retain by soaking in the water: Your Windows must open North and East, which be sure keep shut in the Winter; but in the Summer you may

may leave them open at discretion, according to the fairness or foulness of the weather ; and if you have two Ox-houses, one for Summer, and the other for Winter, it will not be amiss, by reason they may be made suitable to the seasons.

The Stalls ought to be Eight foot wide, that so they may lye at ease, and that the stronger may not wrong the weaker, nor annoy each other with their dung and urin ; as likewise those that feed them, may the easier come to rub and cherish them : And if it could be so contrived, that a Fire might in the winter-time be made in some part of the house, it would be advantageous (provided it did not smoak) : For these reasons ; First, it would dry up the vapours and noisome damps ; Secondly, it would cherish them with warmth, and expell cold distempers that they have taken in their Pastures ; and, thirdly, render them more familiar with their keeper and better feeders.

These Rules observed, you need not doubt but your Steers, Oxen, or any other of that Kind, will be fatted much sooner, and with lesser charge, than any other way yet known.

6. *How to Order your Netherds, in General and preserve them from Infections, occasioning distempers.*

For the better preservation of your Cattle, both from sickness and hurt which may happen through their unruliness, let the Stalls be divided and latticed between, especially where you keep your Cows and Calves, lest one beast beguile another of his Provinder, and to prevent over-laying, goring one another, or the like: And observe this Rule, that good and carefull looking to, is as great a means to promote their thriving, as their Provinder; for certain it is without the former: if they have never so much of the latter, they will not thrive; therefore whether they are housed, or abroad, you must have a carefull eye over them, especially over the younglins, observing how they feed, and, at night, how they lay themselves to rest: And this diligence must be taken Morning and Evening, but especially in the Spring, when you put them out into fresh pasture; for at that time, by reason of their change of dyet they are most subject to distempers.

the cold, or damp of Winter, you must
 likewise be very carefull in feeding them,
 lest by reason of poverty they be in-
 capable either of service, or to bring
 forth ; and therefore be sure to let them
 have store of clean Litter, and good Pro-
 vinder, always observing to keep them
 them cleansed, and free from filth : If they
 be Draught-Oxen, when you return with
 from labour, carefully rub them down
 with wisps or cloths, dry them well, and
 stroke them with your hands, raising the
 Hide gently, which will not only cherish
 them, but make them grow the better,
 and see their feet be well cleansed with
 warm water ; for if you bring them dirty
 into the house, it will subject them to dis-
 eases ; always observing to keep them
 neither too hot in Summer, nor too cold
 in Winter, nor permit them to be chafed
 up and down in any extraordinary man-
 ner ; for if it be in hot weather, it subject
 them to Flixes and Feavour, and cold
 into cold distempers, equally shurtfull.
 Be diligent to prevent your Swine, or
 Poultry, from coming near their Stalls,
 for their dung poisoneth the beast. The
 dung of a sick Swine in your Ox-stall, or
 Ox-house, causeth the Pestilence or Mur-
 rin

rin, frequently amongst your cattle. You must likewise observe, to bury all carrion that is near their house or pasture, or remove it far from thence to preserve them from infection ; and if the Murrain be happened amongst them, you must, without delay, divide them to different Pastures, in diversity of Air, separating the infected, from the uninfected, not permitting them to feed or drink together. But by reason the Murrains are divers sorts, I shall, in the following Chapter describe them and their Remedies together, with the symptoms, how they may be distinguished.

Of Murrains, their divers sorts, known by the following Symptoms ; as also Excellent Approved Medicines to prevent and cure them.

The *Murrain*, much incident to this sort of Cattle, though in name it is simple, yet in its divers Effects it may well be termed a Concattination of distempers. To know it therefore, take these following Observations : In some Murrains, the Cattle drivels, and run both at Nose and Mouth ; in others it causes thirst and por-

ng away ; sometimes it appeareth in the
 ynts, which by the cattles halting be-
 re may be perceived, as likewise behind,
 metimes in their Kidneys, and occasio-
 th a weaknes in their hinder parts,
 d great pains and Aches in their Loins.
 other kind there is, that like Farciens,
 seth with Pimples all over their body,
 appearing sometimes in one place, and
 metimes in another, never long fixing
 a place. Another there is between the
 ide and the Flesh, which causes the hu-
 our to sweat out at divers parts of the
 dy ; sometimes it appears like a Lepro-
 all over the body in Knobs or Pimples,
 metimes it appears by their deafness,
 indness, and want of appetite ; so that
 though they may not presently lose their
 esh, yet so soon as you perceive any of
 ese symptoms, immediately separate
 em, for all these are contagious and
 fectious.

To Cure these distempers, take An-
 illico-roots, Fennel-seeds, Sea-thistles,
 hich being stamped together, mingle
 with White-wine, or Red-wine, and
 Wheat-flower, and boil them ; after
 which, strain them, and give the Liquor,
 and por Juice to the beast afflicted, and at the
 same

same time bathe his body over with hot water, into which the Herbs, Roots and Seeds, when strained, are put; nor forget to peg them in the Dew-laps with Roots of *Elebore*, or *Baresfoot*, which you must do by making a hole with a Bodkin, and thrusting in the Root, cut fit for that purpose; and letting it there remain for a while, it attracts the poisonous humours to it, and makes them void in nauceous water and corrupt matter.

8. *An approved Remedy to prevent the Mur-
rins of all sorts, either Cow, Ox, Bull, or
Calf.*

Take Brimstone, unslacked Lime, Garlic, wild Marjorum and Coriander, and putting them into a Chafing-dish, hold them to the nose and mouth of your Ox, or Cow, &c. that the smoke may ascend up into the brain, and be drawn in with their breath, and fume the out side of their bodies; the which with twice doing, will, though the Herd be infected, infaliably prevent the Infection from seizing those that at the time of using this medicine, are untainted.

9. *Another*

Another approved Remedy to cure the Murrain, which beginneth first in the throat.

This Murraine, though included in the former Kinds, yet the Symptoms being omitted, I shall here Insert them, and its certain cure, unless too far gone. It is known by the swelling and ratling in the throat, swelling in the head, and dulness of the eyes: to cure which take a quart of new Milk, an ounce of sweet butter, Cloves of Garlick, a dram of Safron, half a quarter of an ounce of Cynamon, two ounces of Turmerick, a handfull of Rue, or Harbagrafs, and a handfull of Bittouy; all these Ingredients being stamped and boiled in the Milk, and afterwards well trained, give it your beast that is afflicted luke-warm, and then with an Awl, poure through the skin of his nose, and from thence a pisonous water; if the Murrains have toucht that part, will Issue forth.

10. *How to know whether the Murrain be so far gone in an Ox, or Cow, that they cannot recover; as also another excellent Remedy, for the said Distemper.*

If you are desirous to know whether the distemper has so far preyed upon the vitals, and infected them, that the Ox or Cow is past recovery, and all your labour and charges, for preservation; vaine let him or her blood in the neck and draw from thence near two quarts, if strength will permit; which done, let it stand; and if the blood change, there is hopes of Recovery, but if not in vain will be your care and labour, for he will die.

In case you find your Ox or Cow may be recovered, open his or her mouth, and thrusting your finger under the tongue, to the root, make way for a ball, of the bigness of an Egg, of rusty Bacon, tempered with bruised Ragwort, then bleed 'um at the nose; the which done, take Tansie, Herbagrace, Longwort, Hyssop, and Time, a like quantity, not exceeding half a handfull; each to these, add Long-pepper, Ormet, Fenygreek, and Juniper-berries, of each a penyworth, stamp them and boile them

them in grounds of ale to the quantitie
 of a quart, Straine it and give it your Beast
 as warme as can well be indured.

11. *For the Flix, a Remidie, Aproovd.*

For the Flix, or Lasks take Sloes dried
 that they may bee brused to pouders, and
 give it your Beast to drink in wine-vinegar,
 If it be the Bloody-flix: keep your Beast
 fasting from meat or drink, for the space
 of 44 howrs; at the end of which, give
 him to the quantitie of a pound of Stones
 of Reasons, or Sowre Grapes dried into
 powder, mingled with a quart of Eagar
 Whit-wine, and let him browze on green-
 bows, such as are sweet and wholsom; if
 this prevaile not; burn him in the forehead
 a little beneath the horns, and Slitt his
 Eares, anointing them with Oyl and Tar,
 and his forehead wash with Ox Urin.

12. *An Approved Cure for the Lasks, or Ray
 in Calves, or Cough in young Bullocks &c.*

If your Calves be afflicted with the
 Lasks, or Ray, that deprives them of
 their stomach, and rest, and thereby hin-
 ders their thriving; take new Milk and

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put

put a quantity of Rennit into it, that may render it so thick as can be drank, after which warm it over a fire and give it him as hoot as he will suffer it; and in twice or thrice so doing, it will ridd him of his Trobelsom Distemper. If your Bullock be trobelled with a Cough newly, gottake apint of barley, a youlk of an Egg, and a handfull of Reasens of the Sun; boile them in Sweet wine, and give him the Liquor, in a Drenching-horne, and the Corne to eate. If this Succeed not, as it is not doubted but it will: then make him a Mash of Graines, Wheat-flouer, fryed Beanes, and Lintel meale and mixing them togeather, give him u'm to eate: If your Calves have a Cough, give them Century brused to powder, and it will Cure u'm Infalably.

13 *How to know when your beasts are afflicted with a Feavour or Ague, and to cure the same.*

If your Cattel are trobl'd with a Feavour or Ague, you shall discover it by the watering of their eyes, driviling at mouth heaviness of the head, beating of the Veines and heat throughout the body then permitting them to Fast for the space of a day, betimes the next morning let them

them blood in the tailles, then give them Oyl, water and salt, in which cole-wart stalks have been sodden, pouring it down their throats with a drenching-horne, and so continue to do for the space of five days, always in the morning before they have eaten, ought there to give them to eat lintills, vine leaves, and other cooling leaves, watering them with cold water three times a day, wiping and cleansing their mouths both within and without, with a spung or Linnen cloath wett in Beer.

14. *Of halting the cause, and how to cure it.*

The cause of halting, for the most part, is the blood's falling down into the Ledges, which is known by the heat and swelling of their hoof, and soreness there, the which you perceiveing you must; if the blood be above the hoof in the leggs, dissolve it, if possible, with continual rubbing; or if that faile, let it out by scarseing or pinching the Skin; if it be in the hoof, then open the Claws, and slit them till they bleed, and lay to the sore a cloath dipped in Vineger and Salt, making him a few of broom, not permitting him to

enter into any water or dirty place, but stand dry for six days: If this corrupt blood be not let out, it will turn to matter and evil humours, and be long e'r it cure, if not cause a continual Halting or Lameness: This, by the Country People, is called the *Foul* or the *Wisp*.

15. *To cure the Scalls or Manginess an approved Remedie.*

If your Cattle be Mangie, or Scabbie, the Expedientest Remedie is to rub them, or wash them over with juce of Garlick; the same medicen you may use, if they are bitten by a mad-dog; you may also add to it Peneroyal and brimstone-flower boiled with Oyl, Vineager and Salt-water, and Powder of bitter almonds, which is an Infalible Remedie, if they are not too far gone.

16. *How to know when your Catel are hide-bound, and a remedie to cure it.*

If you perceive your Cattel not to increase their flesh with high feeding, but rather to fall away, then feel them wearrily; and if you perceive their Skins stick to their
Backs

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Backs Or their Ribs, that you cannot take it up, then they are Hidebound, and that occasions their decay; the cause of it proceeds from Cold taken after a Sweat, or taking wett after much Labour, by standing in the Raine. To cure which, boile Bay-leaves in water and with its decoction bath them all over, as hot as they can suffer it, then breathing a Vain in the Neck, rub them a second time over with wine and Neatsfoot-oyle, pulling up the Skin with your hands; then take the Root of a Sea-onyon, and about two pound of the Root of a Poplar-tree, with about a pound of common Salt, and bruising the two former, put them all together into water, where having layne a while, give the water to your Catle to drink, and it will cure them; and by giving them it in the beginning of the Spring, for the space of fourteen days, it preserveth them in health to a miracle.

17. *How to know the Distemper in the Lungs, and to cure it.*

The sickness in the Lungs is perceived by these Symptoms, viz. If the Dewlaps be hare, close together, very far up; all-

to in hard feeling the Hide upon the Back
 it crakle like parchment. It is known
 likewise by a short Hasking-coff, and look-
 ing out of the tongue ; the which, wheu you
 understand, take long pepper, one ounce
 of round pepper, the same quantity of
 Graines, two peniworth of Turmerick,
 two Ounces of Fenigreek, and mace a lit-
 tle quantity, of Cloves and Aniseeds, of
 each a peniworth, Madder *Geneva* Trea-
 cle the outter rine of Walnuts, dried Ju-
 niper-berys, puluerized Ox-longwort, fea-
 thirfew, Harbagrafs, Baberies, Garlick
 and Salt, of each a convenient quantitie,
 consistant to the former Ingredients ;
 and boiling them altogether in small Ale,
 or small Beere, give it your Cattle to
 drink Luke-warme and afterwards Fetter
 them ; and if the distemper have not to
 far consumed the Lungs, it will restore
 them.

18. *The Gall or Yellows, how to cure.*

The sickness occasioned by the over-
 flowing of the Gall, is known by the run-
 ning of the Bests Eys and Ears, and the
 Brown-yellows under the upper Lip. The
 cure for it is Chamberly, Ale-gorunds,
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hard-Sot beaten to powder, Gall-wort,
Long-wort, Plantain-leaves, Harbagrafs,
Hempfeed or Hemp-tops, Garlick a like
quantitie and stamp them together till about
quart of Juice or Liquor be extracted ; and
give it your Ox or Bullock, if he be strong
of Body, but if small and Weak, a pint
will serve, after which, take Salt, Loam-
wall and Leavened Bread made small, and
with it rub his tongue and the roof of his
mouth ; and bath him with Chamber lie on
the Back and Sides, making it indifferent
hot : this likewise is an excellent Reme-
die for a distemper in the Liver, common-
ly known by the swelling in the Legs.

19. *How to know the Blaine, in Ox or Cow
and to cure it a Medicine.*

You may know the Blaine be these
Symtoms viz. Swelling about the Face
and Eys, as also the Bode ; the which,
when you perceive, search his mouth and
if you find blisters under the root of his
tongue or near it, cut them to the bottom
and having thereby let out the Salt-cor-
ruption and Firey humours, rub the place
with Salt and then, permit some Youth to
thrust his hand and arm up the Fundament

of your Beast, and break so many bladders or blaine blisters as he can feel ; his arme being well rubbed with Hogs-grease and then give him water to drink, wherein Bay-leaves have been steeped, and keep him in a warme place.

20. *How to know the Sprenges, Stagers and Dasie, in an Ox or Cow or Bullock, and also Remedies to cure, or prevent 'um.*

The disease called the Sprenges, is known by your Beasts, smiting his head backwards against his Sides, and stamping with his Legs, seeming alltogether restless the which, when you observe, set a youth to thrust his arme into the Beast Fundament, and draw from thence the dung, together with such corrupt blood and filth as he finds, and having cleared it thrust in two handfuls of Bay-salt, which will both stay the Issue of blood, and cause him to dung without paine: The Stagers are known by the redness of your Beasts Eys, his often casting his head backward and frequent Reeling. To cure it take a quarter of an Ounce of beaten Pepper and half a pint of Vineger, which well warmed, pour into the nostrils of your

your Beast, and holding his head up with his head-stall to the rack, close them a while and afterwards let him blood in the Nose-vaine.

If your Beast have the Dazie, which is observed by his Stagering and after turning round; you must let him blood in the Forehead, by flitting the Skin a cross and binding, after he has bled a while, a cloath dipped in Vineagar, upon the wound, keeping his head, with a cloath for that purpose tied about it, exceeding warme.

21. *For pissing Blood, a Remedie often proved.*

If they piss blood, occasioned either by a Strain, Overreaching or the like, take Milk and put rennit to it till it become Curds, after which, having suffered them to stand twenty foure hours, without drinking, give it to each of them, to the quantity of a quart or three pints; and cut off a Joynt of their Tailes or at least let them blood in the Taile, and when they have bled sufficiently; stay the bleeding with applying bruised Nettels to the wound or fereing it up.

22. *An approved Remedie for the panetys,
Disease Incident to Cow, Ox, or Bullock*

If your Beast have this Distemper, will soon appear by his panting and shaking, sweating withall, if the wather be any thing warme. The remedie for it is Soot and Chamberlie, with Juice of Garlicke and Plantine, poured warme with Drenching-horne down his throat.

23. *A present Remedie for the Taint and Gargyse; with the manner how to know them, &c.*

The Taint or Sting-worme, is known by a certain swelling or knob about the head and brest. To cure which, mix Vrine Salt and Treacle together and give it him as hot as he can indure it.

The Gargyse is known by a swelling about the eys, upon the bone there fastening and in a short time appearing like a botch or boile: If you perceiue it has seized your Beast, cut the skin round it and so prevent its comming to the Lips, for if it takes them, it will prove Incureable then take Vrine and Salt and boyle them together

together and with it wash the place grieved, both Morning and Evening, and in short time the Distemper will vanish: Anoint the place with Suet the meanwhile.

4. *For stoppage of Urine or difficulty of making water an approved Remedie.*

The Symtoms of this distemper, is the swelling of the yard, occasioned by the heat of the Bladder; to cure which, and give him ease, take a Pint of French-wine, the whites, of nine or tenn Eggs, six or eight Cloves of Garlick, and restraining him from all manner of provinder, Hay excepted, give him the Juice to drink and at the same time, with a Sirrenge, force up his Yard the Juice of Housleek, Groundsill and Mal-lows, which will alay the heat and make him in twice or thrice using, freely to void his Urine. If the Cods be fwelld, take strong wine Vineger and Salt and with it twice a day, viz. Morning and Evening, anoint them with it.

25. *A cure for the biting of a madd Dog, an
venemous Beast, swelling by poison, it
Wormes, Herding or the like, Licke up you
the Grass; for Collick or paines in the
Belly or other part of the Body, occasioned
by Wind or heat, old Swelling, Bruise or
Squinsie, Loosness, Wormes falling out of
the Fundament, difficultie of Breathing, and
indeed most Internal Distempers: This be
ing for Cattle, the most excellent Medi
cine in Europe.*

Take a handfull of Elder-rine the Inner
most, a handfull of Long-wort, half an
Ounce of Long-pepper, an Ounce of Lithi
quoris, a handfull of Rue or Harbagracey
an Ounce of Anniseeds, half an Ounce of
Cumming-seeds, an Ounce of Turmericke
a quarter of a pound of Madder and put
them into three pints of Ale, and whilst
they are Seething over the fire, beat toge
ther, in a wooden Boul, a handfull of
Bay-salt, six Roots of Garlick, four new
layd-Eggs, with their shells, two balls of
Ourtment and then the Liquor being well
boiled, straine it through a fine Sieve of
haire and put it to the latter Ingredients
then in three pints of Bear, put an Ounce

of Treacle of Venice, an Ounce of Bay-
 berries and when the drink is boiled, mix
 it with the other liquer and according as
 you perceive your Beast distempered, give
 him to the quantitie of a pint, pretty
 warme, morning and evening, for three
 days together and it will Infallibly cure
 the aforefaid Distempers and many other
 of the like nature: preventing all manner
 of Infection and Distempers thereby occa-
 Med. sioned.

Having thus far proceeded, honest rea-
 der, to Instruct you in all that materially
 Inerrelates to Cattle of this kind, and left
 half ano Cronnical distemper untoucht, nor any
 of Lithing that may be for the preservation of
 your Cattles health, or promoting their
 Increase or Thriving: I shall for Brevitie
 Omitt such Inconsiderable cures, as
 every Herdsman is capable of Efecting,
 without any more Instruction, then those
 that have by tradition, and proceed to Treat
 of the Horse, Mares, Colts, &c. A Sub-
 newest worthy, the most Learned of penms.

CHAP.

CH A P. 2.

Of Horses, Mares, Colts, &c.

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- I. *How to Chuse your Stallions and Mares for good Breeders: And to Order them ; together, With Divers Rules to be Observed in the Covering your Mare ; and how to Oblige her to take the Horse.*

NOT to break my method of proceeding in this affair, I shall, as in the foregoing Tretis, proceed Gradularly. And first as to the Getting Conceiving and Breeding of Colts to be Horses and Mares. &c.

If you are Desirous of a good Breed you must be sure to be carefull in choosing your Mares and Stallions ; that they are no ways Defective: Either in their Limbs or Body, for if so those Distempers will be adherent to the Colts they shall get or bring forth: Therefore to Know a good Stallion, take these Observations. Let him be Large and well made ; Cole-black
Except

Except one whit Foot before, if such a one you can get, his Eys Larg standing out of his Head, and somwhot of Bloody or Firey Colour, his Neck Strong and well Set, his Ears Short and standing upright, his Forehead bearing out, his Brest Larg, a flowing Maine, his Legs straite Leane and dry, &c. As for your Mare; let her have a compleat Body, Indifferent Long with a large Womb, a Forehead Swelling out, and by no means too Flat, Legs straite dry and well set together at the Joynts, with other such like marks of Livelyness and Goodness.

This care take to provide good Breed-ers: Put your Stallion to your Mare in a Warm close Pasture, and if she refuse him and spurn at him, you may put a small Stone Nag to wooe her, but permit him not to Back her, and when you perceive her willing to receive the Horse, than put your Stallion into the field; taking up the other and so continue to do Morning and Evening for fovre or five Days, which if she permitts him to Leap her is Sufficent. To prouoke your Stallion to cover your Mare, if he refuse, Rub a Sponge about his Nose that has been in her place of Generation.

When

When you perceive she has Conceaved, which you will do by her striking at the Horse, and biting him when he goes about to Leap her ; then take him up, and let her run in warm pasture, where running or Spring water is, and the Hedges be such that she may not attempt to Leap them : The best time to take Horse, is the latter end of *May*, or the beginning of *June* ; and by that means the Colt will come in a warm Season.

2. *How to be Satisfied of your Mares Desire of the Horse: And to know what Age is most requisit, both for the Stallion and Mare, to Cover or be Covered.*

If you perceive your Mare forsake her Meat, Neigh much, Snuff the Wind and appear Hotter than ordinary, they are signs she is desirous of the Horse.

The best time to permit your Mares to be Covered is at three Years Old, though it may be sooner ; as likewise your Horse at four Years Old, for then both being Strong, Lusty and full of Spirit, the Colts so gotten will prove Strong and Healthy. Some are of Opinion, that whatsoever Colour (if it be a Horse colour) that you place

place before the Eys of your Mare, the Colt will prove of the same Colour: Though I wouldnot have my Reader imagin, that I afirm this particuler for Truth. The best time of Breeding, for a Mare, is between Three and Tenn, and if you suffer her to take the Horse much sooner, she will produce weake and Imature Foales, if later, Dul, Sickly and Infirme ones, no way worth rearing for serivce: Your Stallions best time, is from Fower Years Old till Twelve.

3. How to Order your Mare when she has Conceived, and to prevent Sickness, and to use her at and after her Foaling.

After your Mare has been Covered, separate her from all unruly Cattle, put her into warme Pasture, and give her Oats to the quantitie of a Quart, Evening and Morning, ride her some times; but that Gently, untill the Coult is quickened and somewhat come to perfection; if the weather be Rainy or Cold, you must House her, to prevent her catching cold Diseases, which above all things are hurtfull during that time.

If

If your Mare be difficult in bringing forth, you must assist her; Cherishing and Keeping up her Spirits Especialy, with Sweet-wine spirted into her Mouth, or Ale mixed with a little Bran; and when she has cast, give her Bran or Flover mixed with warme Water and Salt Evening and Morning for the space of three Days and then keeping her Clean with fresh Litter, give her a quantitie of New Grain and sweet Hay, from time to time till she recover her Strength and is well settled. If her Cleaning or After-birth come not a way, take Fennil, Spring-water, Mallow-wine and Sallad-oyle, and making thereof a Luke-warme pour into her Nostrills the quantitie of halfe a pint, and stopping her Nostrills close, it will cause her to void it by straining and motion.

4. *How to Know when a Colt will make good Horse.*

If you Designe to rear a Colt, to make of him a most accomplished Horse; then at Three Months Old view him well, and Obserue his shape, viz. If his Head be little and Lean, his Eys full and Sparkling, his Eares standing up, his Forehead bene

ing out, his Nostrils large, his mouth ever
 on both sides, his Neck well set, long and
 bending like a Swans, a short broad Back,
 the Maine curled and hanging down on the
 right side, mostly; a broad and well set
 Chest, great Sholders, double Buttocks,
 round-sides, Gaunt Bellyed, carrying his
 Stones close and even and lastly, a bushy
 Taile, well set unto his Rump. If all
 these markes are found in your Colt; he
 will certainly prove a good Horse, unless
 spoild in the bringing up.

*How to know the Age of a Horse, by his
 Teeth, Eyes and Eyebrows, Hoofs and o-
 ther Infalible Tokens.*

Nature afoards the Horse, when he has
 full number 34 Teeth, above and be-
 low; though some will have him have
 but 30. The time of his having them are
 these, a Colt of a year Old, has six on ei-
 ther side, above and below; at three years
 and a half Old, he has tenn on either side,
 four Years old, the Illshaped or dogs
 teeth fall out; and between that and six,
 other teeth spring up in their roome, and
 six Years old, all his teeth are perfect-
 the eye teeth and great Cheek, teeth
 in

in the said sixth Year, falling out and receiving others in their places ; being altogether hollow, after which the Mark or Black-speck appeareth in the fore-tooth and continues till Eight, at twelve Years old the side teeth turne black and the order he grows from that time, the longer they will bee, unless he feeds upon extraordinary hard meat and be strong Jawed and then often they keep at a stay ; after twelve look no more in his mouth for his Age ; but observe his Temples, which will begin to hollow, his Hoofs seame one seame over another, and if paring off a peiece of the hoof, you find it brittle, dry and Crusty, it denotes a very Aged horse to know by his Taile, his Age, feel with your thumb and finger close at the setting on, or growing to the Rump, and if the Joynt one each side stick out in a knop, bigger than any other, by the bigness of a small birds Egg ; then he passes not two Years old, but if that Joynt be plaine and even with the rest ; then he is past ten and is betwen tenn and thirteen Years old.

If his Eyes be round, full, standing out and sparkling, no sinking in the Pits appearing, but that they be even with his temples and no rinckels appear in his brow

row ; then is he a young Horſe, the contrary denotes him Old.

If his ſkin come up eaſily and fall to the place when let goe, preſently ſmoothing without any token of Rinckle, then the Horſe young ; but if it ſtand in a heap and retune ſlowly to its place, after ſome time is let goe, then is he Old and waſted.

If he be of a dark colour and the hair of his Jawes Eye-brows turne gray or grizled or white ; after you perceive it ſo underneath his Mane, if any light coloured Horſe, or white Horſe, ſhall have black or red Meannels, ſeame over all his Body ; Then obſerve theſe to be both Signes of age.

And laſtly, If the barrs of his mouth be deepe and large, handling roughly, then the Horſe is aged ; but if on the contrary, ſettlen Young and fit for Service.

How to Geld your Colts, and at what Season.

The Spring and Fall, are the beſt time to cut your Colts, or if you cannot obſerve the ſeaſon ; Then in the waine of the Moon, the Signs being either in *Virgoe* or *Scales* ; at nine days Old you may Geld them, if you perceive their Stones to fall, or

brow

or you may Geld them at a year or two years old, if you think fit; cutting the Stones from the Grisles and searing the feames to prevent bleeding, anointing the Cods with fresh Butter or Mutton-sewage and beware that you keep them warme giving them Pollard to eat, Morning and Evening; if they swell much trot them about in a warme day and it will Aswage it.

7. *The best and Easjest way to Tame and Break your Colts, in Order to Back them and bring them to the Saddle.*

I would Reader, advise you for diverse reasons, not to attempt Backing your Colt till three Years Old at least: First. for that you will make him Sway-backed Secondly. For that you will hinder his Growth. and Thirdly. Subiect him to weakness in his Loyns, and Lamenes in his Limbs: Yet you may a long time before that, make him Familliar with you, by giving him Hay and other prouinder out of your hand; Stroking, Rubing and Combing of him; giving him Water taking up his Feet and beating his Hoof putting a Halter on his Head, &c. But

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You Designe to have your Horse of Long Continuance, Back him not till five Years Old, and let it be Either in the Spring or Fall that you attempt it, that so the Humours may be the better Dispersed, and not by Unusual motion settle in any part of the Body.

8. *The best time for weaning Colts, and how to Order them; as also what Ground is best for them.*

The best time to wean your Foals or Colts is at a Year Old, though you may do it at five, seven or nine Months; But Obserue, if you continue him a Year, you must not permit him to have his fill of Suck above once in two days, when he is past seven Months Old, but give him Skim-milk and Whey with Bran in it, Sweet-hay and new cut Grass and keep him warme, when you have weaned him; let him not remaine within the hearing of the mare; for then by longing and pining after her, he will wast his flesh and the better to make him forget the Sweetness of the Teat; rub his lips with a Clove of Garlick and give him a lump of Savin and Butter to the bigness of a Walnut and feed

feed him high, for a year after you have weained him: And let your pastures they run in, be dry & firme under foot, no matter how uneven, let them be assending if possible and watered with clear Springs: suffering every years breed, to pasture by themselves; having thus far proceeded I shall now come to proscribe such Cures as are most necessary for all Diseases, both Physicall and Chirurgical, in Horses, Mares, or Colts.

A Tretis of choice Receipts, for curing Distempers in Horses, Mares and Colts, both Physicall and Chirurgicall.

1. *A cure for the cold in a Horse, Mare or Colt.*

Take Moss of the Oake, a handfull, boile it in milk, to the quantity of a quart, let the milk be new, and cut into it the Green-roots of Ellecumpain and Liquorish, the which, being well Concocted, put into them a peice of Fresh-butter and a quarter of a ponnd of Treacle, give it them

hem well Strained through a haire or wollen ceres Seive, Luke-warme and it will effect your desire: It also is an excellent Medicine, in case of the Head-ach, Phranzie, Pose, Stavers, Cough wet or dry, shortness or difficultie in Breathing, Putrifaction of the Lungs, Glanders, Loosness or Bloody-flux; and indeed, a most Sovereaign Remedie for many other Distempers; if given in time.

2. A fume to cure the stoppage in the Head, when the Horse voideth filth at the Nose.

Take a quarter of an ounce of Auripigmentum, and Colts-foot beaten into powder, half an ounce of Venice Turpentine, and mixing them well together, make it into small flat peices to the breadth and thickness of a sixpence, and having layed them a day or two to drie, put one of them at a time into a Chasing-dish of coles, and hold it under the Horses nose, the Chasing-dish being covered with a funnel, the little end of which put into the Nostill, on that side you perceive the Obstruction, and in so doing you will remove the cause, and bring away the putrifaction thereby occasioned.

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3. *An approved Remedie for broken wind or Cough; shortness of Breathing or Pur-sueness in a Horse or Mare.*

Mix Tar, Pouder of Lipuorish, Sweet-butter, bruised Aniseeds and brown Sugar-candie; of each a considerable quantitie; and mold them together till they become stiff, make them into balls, and into each ball, put six Cloves of Garlick, and having coursed your Horse or Mare about till he or she is warmed, dipping one of the balls in Sweet-oyl, cause him to swallow it fasting, and let him fast four hours after this doing three or four Morning will effect your desire:

4. *An experienced Medicine for the rattling Cold in the head of a Horse, &c.*

Of Mustard-feed, take half a pound bruise or grind it with Vinegar, till it becomes thinn; then add to it an Egg well beaten, half a quartern of Olive-oyl, the best, then work them well together, and tying up you Horses head to the Rack pour part into his mouth, and the other part into the Nostrils, stopping the

close for a while, and by so doing you will cause the Impediment to remove and the effect to cease.

5. *A Medicine to cure the Glanders, and to heal the Ulcer and canker in the Nose.*

Take Verjuice to the quantitie of a pint, put in it three spounfulls of Mustard, an ounce of Roch-allom pulverized, and mixing them together, tie up his head and put it into his Nostrils with a horne, and having suffered it to continue there for the space of a quarter of an hour; ride your Horse till he sweat, not permitting him to drink any cold water, but rather whey, warmed over a fire; and thus doing for three or four days, once a day; your expectation will be answered.

6. *A Cure for the Canker, or swelling of the Tongue.*

If you perceive little Bubbles, Blisters or Boiles under your Horses tongue, that cause him to neglect Eating Hay, by reason the Eating thereof is painfull; then give him Pease and Beans, ground small, and with a fine Instrument, cut away the bladders or Boiles, which if you be dex-

terous, you may easily doe, and rub the place with Bay-salt and Roch-allem, beaten fine, and then wash it with a little Hony and water boiled together ; and this will cure it.

7. *Symtoms, to know the Feavour in your Horse, when got ; and by what means, as also, a Cure for the same.*

The signs to know the Feavour, in your Horse are these : If he holds dowd his head, quake and tremble, and when his trembling is past, he Breaths hot and short, fetching his breath Fast ; If his Flanks move unusually, and he Reelee or Stager, if he forsake his meat, and his Eyes being Swelled, look dull and heavy, almost Closed, and water much ; if his Stones hang down, and his Flesh be very loose, and he be desireous of drink ; yet drink but little, and his Flesh departeth from him. All these are signs of a Feavour and of Feavours, they are Divers kinds ; yet gotten but two ways ; either by Heat or Cold ; the former, by overmuch Labour and too suddainly coling or watering, the latter, by standing in the Raine, or Damp moist places ; for which Distemper is
general

generall ; I shall lay down a most excellent and approved Medicine.

Get hafe an ounce of Diapente, an ounce of Bayberies, and of Long-pepper an ounce, beat them together with an ounce of Diascordium, and putting them all into a quart of Strong-Ale, heat it over a fire and give it him warme, as soon as possible ; not having regarde to any particular times ; for in this case delays are dangerous. After he has received it cloath him up warme, and keep him in the Stable well Littered, that he may be disposed to rest ; which will much advantage him in this case, especially when the potion has done working, and his swelling is over ; at what time having ready, half a pint of Whitewine, two ounce of Honey being dissolved therein, give it him warme and so let him rest, for the space of four hours ; when visiting him again, give him Honey and Stale-Beere, mingled, to the quantity of a quart of the one, and four ounces of the other ; or if you perceive him in any condition to be carried abroad ; it will be most requisit to give it him after an Airing, adding to it a quarter of a pound of Sweet-butter, and a peice of Houshould-bread ; all of them

being boiled together and well beaten then bring him into the Stable, give him warme water and bran, and so for that night let him rest, and the next morning fasting, give him the first drink prescribed, and so the rest in order, which, within two or three days, will abate his Feavour, and restore him in five or six days, to his former health, unless he be greatly Infeebled thereby.

8. *To kill Botts and wormes in your Horse, an excellent Remedie, and the Symptoms whereby to know this grief.*

The Symptoms, by which you shall be satisfied, whether your Horse be troubled with these Insects, are when he is Laxative and dungs often, though a small quantitie, when looking upon the Excrements you shall perceive small white Wormes; 'tis also a sign thereof, when his Breath is noisome, his tongue-root yellow and many knobs appear under his upper Lip.

These Symptoms satisfiing you of the cause of his grief; take Anniseeds, Turmerick and Brimstone-flower, of each of them an ounce, together with a quartern of Brandy, mixing them with Strong-beer

to the quantitie of a quart, give them him
to drink Fasting, keeping him without
meat four houres after, and suffer him
that day to drink no other then warme
water ; if he have not been for some time
before let blood, you may open his Neck-
vaine, and lanch the third barr of his
mouth.

9. *An approved Remedie, for the Distem-
per called Srangullian.*

This Distemper, is known by a Horf-
es often straining in vaine, to make water
but cannot ; though his Bladder be ready
to burst, to cure which, and cause him to
void his Urin ; Take a pint of Clarret or
Red-wine, putting thereto Iuie-berrys
and Parsly-seeds well bruised, of each the
quantitie of an Ounce, and give it him to
drink.

10. *For the Fraizie Head-ach or Stagars,
an Approved Cure.*

These three Distempers, though of dif-
ferent names, proceed from Heats and
Cold, tending to the same effect,
being equally dangerous, the Symptoms to

know them by, is the Horses hanging down the head, and reeling too and froe, the which, as soon as you perceive, let your Horse blood, three mornings one after an other; walk him well after, and to either of his Temples lay a plaister of Burgundia-pitch; keeping him in a warme and dark Stable, with little meat, and that the Choicest.

11. *To cure the Horse that is Hide-bound, and looses his Flesh, an excellent Cure.*

This disaster, is occasioned by excessive heat, in disorderly and unmeasureable Travell; and is known by the Horses refusing his meat, falling away, and the skin sticking to his Flesh, that it will not part from it: The cure for it is letting him Blood in the Neck and Taile; giving him to drink a quantity of New-milk, with two ounces of Treackle and Honey in it, three or four Mornings fasting, feeding him the rest of the day with a Math of Spelted Beans, Bran and sodden Barly.

12. *A Glister for the Collick or griping in the Guts.*

Take Brine or salted water a quart, and dissolve in it, halfe a pound of common Sope, and give it him Luke-warme, in the nature of a Glister ; and it will ease the paine and cause the effect to cease.

13. *For the Sleeping Evil or Lethargie a Cure.*

This Distemper is caused by Cold humours, Distilling upon the Braine, and Flegmatick Disconcoctions, causing fumes to assend from the Stomack into the head, making the Horse dull and heavy ; the signs by which you may know it, is the droufsness, continual desires to sleep, as well standing as lying down : To cure it, give him Castele Sope, to the quantity of a Hen-egg and after it, a quart of New-milk, warme from the Cow ; keeping him both before and after, in motion, for the space of an houre or more, making him Sweat if it be possible, and the cure will be effected.

14. *An excellent Remedie for the Falling
Evill, or Night-mare, as they terme it, and
for such Horses as are Plannit-struck,*

These Distempers are in effect one and the same, as being caused by one and the same matter, viz. Cold humours, thick and Flegmatick, which distilling from Divers parts of the head, and assending Vapour-wise from the Stomack, settle about the Braine, chilling and benumbing that Seat of Life, and by so doing disorder the Senses, and cause the Members to faile of their office; the opporations being these; when it causes the Horses limbs to faile under him, that he sink down; then it is called the Evil, when one of his Limbs only faile him; then is it said to be the striking of the Plannet; and when in his sleep the Horse is oppressed, with a cold-sweat and much Trembling, and by reason of frightfull Dreames, seems much disturbed; it is called night Mare though the cause is as foresaid. To cure this too frequent and dangerous Distemper; mix Tar, Sweet-butter, Pouder of Liquorish, Sugar-candia and Aniseeds to the quantitie of an ounce,

ounce of each, and making it up into little Pills give it your Horse, and in each Ball or Pill, two or three Cloves of Garlick; letting him be fasting both before and after, for the the space of two houres keeping him exceeding warme.

15. *For the Mourning of the Chine or running Glanders, an excellent Remedie.*

Mix together Tussicaginis and Auripigmentum, two drams of each beaten into powder, and then mould them into stiff Turpentine till they may be made into Pills or little Cakes, then drying them well, and putting a Chaffing-dish of coles under your Horses Nose; put two of the said Cakes or Pills into it and so order it that the smoke may fume up his Nostrill, then stop them with black wool dipped in Oyl of Turpentine, and ride him till he Sweat, afterward, keeping him so three houres, afterward taking out the wool, a world of filth will follow; and at twice or thrice so doing, the cure will be effected if it be taken in time, before it be too far gone.

16. *A cure for the Antecor or paine in the Brest or Heart, causing extream Sicknes, &c.*

The cure for this Distemper, occasioned by unreasonablen feeding in rank Pasture; is to let him blood, and for two or three mornings together, give him two spoonfulls of Diapente in a quart of wormwood Ale or Beere. The Symptoms, to know it by, is drawing his forelegs, hanging down his head and neck together, with a trembling, and sometimes a cold-sweat, all over his Body.

17. *A cure for the Disease in the Stomack, occasioned by cold herbs; when your Horse loaths his meat.*

This Distemper, commonly taken for a Surfait, is occasioned by eating cold raw herbs or weeds or too much Glut of Provender; which causeth such foulness in the Stomack of the Horse, that he Voments up what ever he eateth and loaths his Meat. The cure for it is, an ounce of Diapente, and an ounce of Trephenecon; give it him in warme Ale fasting, and for that day

day give him no Food but what he eateth out of your hands, which must be Bread well soaked, Oats, and lastly, fine Hay, and give him Milk to drink ; hanging at his Nose a sponge diped in Vinegar ; and thus useing him three or four days, his Stomack will returne ; and your Horse will retaine his Food.

18. *To cure the Distemper called Founder-
ing in the Body ; a most excellent Medi-
cine.*

This Distemper is a dangerous one, gotten by excessive riding, in so much that the Grease being melted ; he is permittd to coole thereon too suddainly, either by standing still, or in discreet washing : The Symptoms, to know it, are the dulness and heaviness of his countenance ; his belly gant and loose, his haire starring up disorderly, and his Limbs appearing stiff ; to remedie this give him Spelted-beans made into Bread, and warme water, after which, give him an ounce of Cinamon, and of Pepper and Treackle the like quantitie.

19. *A cure for the Distemper proceeding from the Liver, Consumptions, Obstructions and the like, with the Symptoms, by which they are known.*

These Distempers are known by the foule and noisomness of the Horses breath, and his often casting his eys upon his Body. The cure is Aristolocia Longa, boiled in Spring water, and given him to drink, Morning and Evening for the space of ten days ; a quart at a time is sufficient.

20. *A Cure for the Distemper proceeding from the Gall, especially the Distemper called the Yellows.*

The Distempers are divers, that are occasioned by the overflowing of the Gall, which is the proper Vessel for Cholour, many of which prove mortal, if not timely remedied ; but more particularly the Yellows, known by the Yellownes in the Eyes and under the under Lip next the teeth ; by Fainting sweats and falling down in Travel or at meat ; For this Distemper let him bleed in the Neck and mouth

mouth or in the temple Vaines ; and then
fasting give him Safron and Sweet-butter
made into Pills as big as Walnuts,
and after warme-water and moist Hay ;
continuing so to do till you perceive the
Yellows both under his lip and in his eyes
to Vanish.

21. *For the Spleen an excellent Remedie.*

The Spleen is the seat of Malencholly,
the which proving full and hard swells to
that bigness, that it is exceeding painfull ;
causing the Horse to Groane, eat hastily
and be continually looking upon his left
side ; when you perceive these signs, take
the herb Agrimony, boyle it in water,
and taking the Leaves, Chop them and
make them up in Sweet-butter and give
them Pill-wise, Morning and Evening and
after it, give him the water wherein it
was boiled.

A Tretis of Chirurgical Cures for Horses, &c.-

1. *A Cure, for the Back-sinue strained, or other Straines; as likewise, for a Numme and Shrinking in the Sinneus.*

Roast a Mastif-whelp, with his belly filled with black Snailles; baisting him with Oyl of Spike and Oyl of Bees wax, mixed with Saffron strained in it, and then, with the dropping, anoynt the place grieved, and it will Cure it, remember to use it hot Morning and Evening.

2. *An approved Remedie for a Shoulder straine, Whind-gall, or Swelling in any part of the Body.*

Of Hogs-lard, take half a pound, melt it on the Fire, then take it off, and add fover ounces of Oyl of Spike, one ounce of Origanum Oyl, the like quantity of the Oyl of Exceter, three ounces of the Oyle of St-Johns-wort; mix them well together in an Earthen Pot, well glazed

and as occasion requires, holding a Fire-pan under your hand, Chafe it into the Grieved part twice or thrice a day, and moderately Excercise your Horfe; and you will certainly find the good Effects.

3. *An Excelent Remedie for an old Lameness, or Straine.*

Take of Barrows-greas, Black-sope, Bole-armorick, and Neats-foot-oyl, of each, to the quantitie of three or fover ounces; temper them well, and boyle them in an Earthen pan; and as hot as your hand can indure it, rub the place grieved; and it will restore the Horfe to his former strength.

4. *An approved Plaister, for Straines in general.*

Of Frankincense, and Burgundia-pitch take a quarter of a pound of each, of Stone-pitch, Bolarmorick and Clerefied Rosin an ounce; as also, an ounce of Mastick, all which boile together, till thay come to a considerable stiffness; then making it up into a Salve; as occasion requirs spread it, upon Sheep-skin, with the

the woll on, Dear-skin, Fox-skin, or any warm Skin ; and by once or twice applying, unless it be an Extraordinary old straine, it will Cure it.

5. *An approved Remedie for a Canker in the Mouth, Noftrils or other part of the Body.*

To a pint of Whit-wine, put an ounce of Roche-allum, Bay-salt and Honny a Spone-full of each, adding, of Red-sage Ribwort, Rue and Bramble-leaves, of each halfe a hand-full ; boyle them together till the liquor be half consumed ; then with a Serrenge, Inject the water into the mouth, nostrils, or other grieved place wiping the Canker with a rag dipped in the said water ; and by so doing, after the Canker will wast by degrees, till it be quite consumed.

To stay the bleeding at the Nose ; Inject the Juice of Nettles, and it will effect it.

6. *For the falling out of the Fundament, an approved Receipt.*

If the Fundament fall out, anoint with Oyl of Roses and Red-wine warmed together

any together, then put it up ; but if it fall a
 ply- second time, bolye Chamomile, Mallows,
 old Linseed and Fenegreek, and adding there-
 to Oyl of Dill and Chammoile ; bath it
 well with them prety warme, and putting
 it up spirt some of the Liquor into it, and
 then bind the taile fast down to keep it
 in ; which you may doe by fastening it by
 a string and bringing it between the Legs
 and there binding the string to the Girts ;
 and so let it continue, not giving the Horſe
 any Meat for twentyfour hours ; and by
 doing twice or thrice it will cure it.

7. *An approved Remedie for the biting of a
 Mad-dog.*

Take Gotes-flesh, or Beife, if the other
 is not to be had, alſo Goats dung and Da-
 newort a herb ſo called, of each half a
 pound, a conſiderable quantity of Wal-
 nuts ſtamped, Green ones, if the Season
 will permit, and laying them, well tem-
 pered together and warme, to the wound,
 and it will cauſe the Vennom to come
 forth ; give him likewiſe at the the ſame
 Inſtant, White-wine and Treackle boyled
 together.

8. *An*

8. *An excellent cure for the Fistuloe, or Pole-evil.*

Mix an ounce of Verdigreace with a pint of Honey, and let them boyle together parts of an houre, adding the Juice of Bears-foot, or Elebord a quarter of a pint; then dipping a tent into it, thrust it as far as possible you can into the Fistuloe; and it will bring away the poisonous humour that feeds it; do the like in case of the Pole-evel, by opening the skin, and also bath the place therewith.

9. *An approved Remedie for curing the Farcie.*

The tops of Rue being gathered, mix with them Hogs-grease, dried and freed from Salt, an ounce; beat the Rue in a mortar and straine the Juice from the Leaves, and having melted the Hogs-grease, make an Oyntment of it, and stop a quantitie of a walnut into either Eare putting Cotten-wool upon it, sowing up the Ears; and so permitting it to continue 24 hours; it proves a perfect cure.

10. *A receipt to Ripen an Impostume or Swelling.*

Take Lilly-roots, Mallow-roots, Hogsgrease and Linseed-meale, and having bruised them, boyle them together ; and then Plasterwise apply it, and it will ripen and breake any Swelling or Impostume whatsoever.

11. *A Cure for the Tooth-ach or paine in the Teeth of a Horse, or to fasten Loos-teeth.*

For this Distemper bleed your Horse in the Gums, and rub his Teeth, Gums and other parts of his Mouth, with Bittany and Elacampaine boiled together ; and it will not only cease the paine in the Teeth, but also fasten them ; and by often using, it preserves them from blackness.

12 *An Aproved Cure for the Blood-rifts, Lamprass, Liggs, Inflammation, Camery, Tongue-burnt, or Barbs.*

To Cure these Distempers, Incident to the Mouth of a Horse, take Worumwood-leaves and leaves of Surwort, pound them

them in a Mortar, with a small quantity of Hony; and with it anoint the place Grived: this Infallibly cures all the said Distempers, vnless the Lamprass, which must be burnt before it is washed with the Juice aforesaid.

13 *A Cure for Manginess: Maine or Haire falling off; and for the falling off the Crest*

Anoint the Mangie place with Butter and Brimstone, and it will kill it in a short time: If the Maine, or haire in any other place fall off, anoint it with Olive-oyle, in which the ashes of Suthernwood have been mixed, and it will make the haire grow againe: For to keep up your Horse's Crest; good feeding and carfull looking too is the best Remedie, that being for the most part occasioned by povertie and dislike.

14 *For the Wind-gall, a Cure.*

This Distemper is known by small soft Swellings about the Fetlock, caused by travelling in rough stone way; to Cure them, the only Remedie is a plaister of Stone-pitch, after you have Lanced or pricked

pricked them, to let out the watery humour.

15 *To Strengthen a broken Bone, or bone out of Joynt when set.*

The Bone being rightly placed, take Oyl of Swallows and root of Osmund, and with it anoynt it; bray the latter in a Morter, and mix it with the former; after which, the Bone being well Splintered, dip a thick wollen-cloath in the Oyl, and spread some of the root mixed with Oyl likewise upon it, and bind it hard about the bone, or if it be a Rib, then bind it about the Horses Body strait; and it will effect the cure and cause the bone suddainly and strongly to knit.

16. *To cure a Sinnue that is cutt.*

Take the Leaves of Nep, such as grow wild, as likewise the leaves of woodbine, bray them in a mortar with Sweet-butter; and it will cause the Sinnue to Unite being applyed therto poltis wise.

17. *To*

17. *To draw out a Thorne or Stub.*

To effect this use Dittany and black Sope, brayed in a mortar, and lay it plasterwise to the place grieved ; and it will likewise draw out the Thorne or Stub : the wound being first opened.

18. *A cure for the blood Spavin, Hough-bone or any such like Swelling ; proceed from what cause soever.*

The Spavine and Hough-bone, is a Swelling soft and Round ; on the inside of the Foot, the other on the Huckle of the Hough, being both very sore and troublesome to the Horse ; To cure them tying up the Veine in the Leg and let him bleed below the tying, then tying the Veine above and below the place where you opened it, slit it in two ; then apply to the swelling, Bruised-linseed and Cow-dung well mixed and fryed together, and if that faile to break it, apply a Plaster of Pitch ; this being once or twice used, the Spavin and Hough-bone will never on the Legg afflict him more ; but if the swelling come by a Straine, Bruise or the like the

then mixing Pitch and Grease together;
 lay it hot to the swelling Plasterwise; and
 will Cure it; what swelling soever it be.

10. *The Infirmities of the Hoof, how to Re-
 medie; as loose Hoofs, Hoof-bound, Hoof
 running, fals Quarters, brittle Hoof, soft
 Hoof, hard Hoof or Hoof hurt; and in-
 deed how to Repaire and preserve Hoofs of
 all kinds.*

If the Hoof be loose bind it about with
 plaster of Burgundia-pitch exceeding
 hot, and put some into the hinder part of
 the Hoof if you can. The fals Quarter
 occasioned by the pricking in the hin-
 derpart of the Hoof, and the Shoo's not
 being close; which must be Re-
 medied by Fixing the Shew close,
 and by pairing the Hoof well, and cle-
 ar shewing. If the Hoof be quite off, a
 plaster of Tallow and Burgundia-pitch,
 will cause another to come in its roome.
 If your Horse be Hoof-bound; the strait-
 ness of his hoof makes him uneasie, which is
 shewn by his often stamping; then open
 at the heels and under the foot, keeping
 moist with Neatsfoot-oyl; anointing
 the Corownt with Bacon-grease and
 Tar.

Tar. If you perceive the Frush of the foot to void Putrification, then stop it with Soot, Bole-armorick and Turpentine well mixed and heated over a fire. If the Hoof be brittle and will not hold shooing, then anoint it with Linseed-oil and Stone-pitch melted and made into a Salve, binding it on hard with a peice of Leather, and so permitting it to continue for divers days. For a soft Hoof that will not indure the hard or stony Ground, take common Sope, and the Ashes of a felt hat, mix them together, and having stopp'd the hoof with Towe dip'd in Allum-water, lay it to it Plasterwise. And for a hard hoof, to soften it, let your Horse stand in hot Embers or Sindere, then rub over his hoof with Tallow, or if you can get in Stags-fuet, and if you would preserve your Horses hoofs from all defects, rub them over every Morning with the rine of Bacon, to which a quantitie of the fat is sticking.

Thus much, Reader having layed down for your Instruction, as to the Breeding and Curing Horses, Mares and Colts: I shall now proceed to the next usefull Creatures in this our *English* Nation, viz. The Ass and Moile or Mule.

C H A P. 3.

Of the Ass and Mule, &c.

THE Ass and Mule being both labourous Creatures and comming nearest to the Horse; I have not thought it amiss, to lay down some particulars relating unto them, for the beter instruction and benefit of my Reader, and of these in order.

The Ass above all Creatures, is the most hardie, and in feeding the most Indifferent; being content with any kind of Provinder, which made the weeping Philosopher Laugh, once to see one of them Mumbling Thistles contentedly, whilst some men Indued with rational Souls could not content themselves with all the Riches and Glory of the World; but the more they Injoyed, the more they Craved.

This Creature will indure the sharpest colds, or the most scorching heat, only by feeding upon Chaff, Pease-straw, chop-

ed Hay, Graines, Green-boughs, Thistles, Herbs or Weeds; so that with little or no charges they may bee maintained. As for their dressing or looking to, they need not much; and for Hunger and Thirst they will patiently sustaine it, nor refuse any labour they are capable to undergoe, being rarely Subject to sickness: therefore of all other Creaturs, longest indure; their Service is used at the Cart, if the Load be not over ponderous, and are in some Countries put to the plough: In *England* they are mostly used to carry Burthens and to Labour in the Mill.

If you design a good breed of these Creatures, Observe that your Stallion and shee Afs, the one exceed not four years old, and the other not three; let them be of the Largest size, well set, big Necked, Large and strong Ribbed, brawny Brested, Legs and Joynts brawny, and well knit, of Colour, a dark Brow, with spots, having large Ears and full Eys.

The Female Afs bringeth forth her burthen as the Mare, performing it in all respects; and in her Backing the same order must be observed, only with this Observation, that as soon as she has been Leaped, she must be driven two and froe

to

to make her Retaine what she has received: She feldome bringeth two. Their best time of breeding is from three years old till ten; though they will bring forth all their lifetime, which according to *Arrestotle* is thirty years, if they live to their full age. The shee As must not be hard wrought; and better dieted then at other times; but if the hee As be kept from Labour long, it will render him incapable of Generation, therefore the best way is before he Leaps the shee, to let him Labour for an houre or two: The Foale or Colt you must suffer the first year to run with its Dam; and the Insuing year tie it up with the Dam only at Nights, feeding it with Bran and Whey, Green-grass, Green-boughs, Wheat-chaff, or the like, as the Season will permit. The love of the Dam is so great to her Foale, that she will venter through the fire to it, though not through the water; for above all things they care not to wett their Feet, and therefore in observing to keep them dry, you will greatly preserve their health; for these Creatures will rather suffer extreme thirst, then drink in strange waters, where they have not been used to drink,

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and when they drink they only touch the water gingerly, as if they feared it, for which many give this reason, *viz.* That they beholding the shadow of their large Ears in the water fear to wet them. They thrive best when they are lodged in large Romes, by reason in their sleep they are troubled with affrighting Dreames, and thereupon so paw with their feet, that they often hurt themselves if any hard thing ly near them.

The Infirmitie of this Creature, is mostly in his Feet, occasioned by standing or travelling in the wett; which often occasions his halting, the which when you perceive, as likewise at other times to prevent it, wash all the feet in warme water, then making them cleane with a hoof-knife, taking out all the Gravel, dirt, &c. Take old Chamberly as hott as possibly it can be indured, and wash the feet with it; then melting Goats or Ox Tallow, anoint the feet all over, stoping it into the crevices; and in all their other distempers which are much the same with those of the Horse, use the Medicine prescribed for the Horse.

Of the Moile or Mule and his Generation.

The Moile or Mule is gotten by a stone Ass upon a Mare, being a Creature somewhat resembling them both, yet perfectly neither; yet they are many of them not only good for service, but in swiftness, comparable to the Horse; and were in former time much used in war: The Stallion you designe shall cover your Mare, if you designe to have good Mules, must be Well Set, Brawny Thighed and full Breasted; the Body neat and large, his Head lean and small, with large standing Ears, his Colour black or spotted-brown. The Mare, in this case, goes eleaven full Months and Foles in the twelfth; the Mares for breed, must not be under 4 years old, nor exceed ten. There are likewise an other sort, gotten upon a shee Ass, by a stone Horse; and for distinction sake, the former are called Mules or Moiles, and the latter Neyards. But of these, those got by an Ass upon a Mare are best, the other being heavy and dull not fit for travel. And most are of opinion, that Mules never ingender between them selves; though *Aristotle* contradicteth that opinion; saying,

that they do both ingendre and bring-forth
 in some countries, and especialy in *Affrick*.
 It is likewise further affirmed, that of what
 colour soever you are desirous your Mule
 should be, with that colour Cloath your
 Ass when he leaps the Mare, and the con-
 ceit will bring it to perfection; though, to
 this I give but little credit. When your
 Mare has foaled you must take the Foale
 from her, and put it to another Mare that
 has a Colt sucking, who within a short
 time, having her own Colt taken from her,
 and this put to her in a dark place, will
 receive it as her own: Nor will it be amiss
 to let your stone Ass-colt, that you intend
 for your Stallion, to be taken young from
 his Dam, and put to a Mare; as likewise
 brought up amongst them to make him the
 more familliar and ready to Leap them;
 though indeed he will be prompt enough
 to do it, without any other incitement
 therto than his own natural inclination,
 being a creature in him-selſe extraordinary
 Lustfull: But put him not to a Mare that
 has never taken Horse, for if so, she will
 beat him at such a rate as will make him
 out of love with her, and baulk him for-
 ever after; but in that case, put a wild-
 Ass to wooe her, the which when he has
 done,

one, and you find her gentle then take
him away, and put your Stallion designed
for the purpose.

At a year old waine your Moile and give
him Grasse, Hay, Oats, Choped-straw, and
Chafe, keeping him warme and out of the
wett as much as may be, till he become
strong and lusty ; and then, he being fover
years old or three at least, you may Back
him and bring him into order, as to what
you designe him : And thus much for the
Mule, who well managed, will prove as
servicable as the Horse, and what Dis-
tempers he is trobled with, which are but
few, are consistent with those of the Horse ;
to which, Reader, for brevitie sake I
shall referr you.

CHAP.

CHAP. 4.

*Of Rams, Ews, and Lambs, &c.**I. How to Know a good Ram, and Ewe for breeders.*

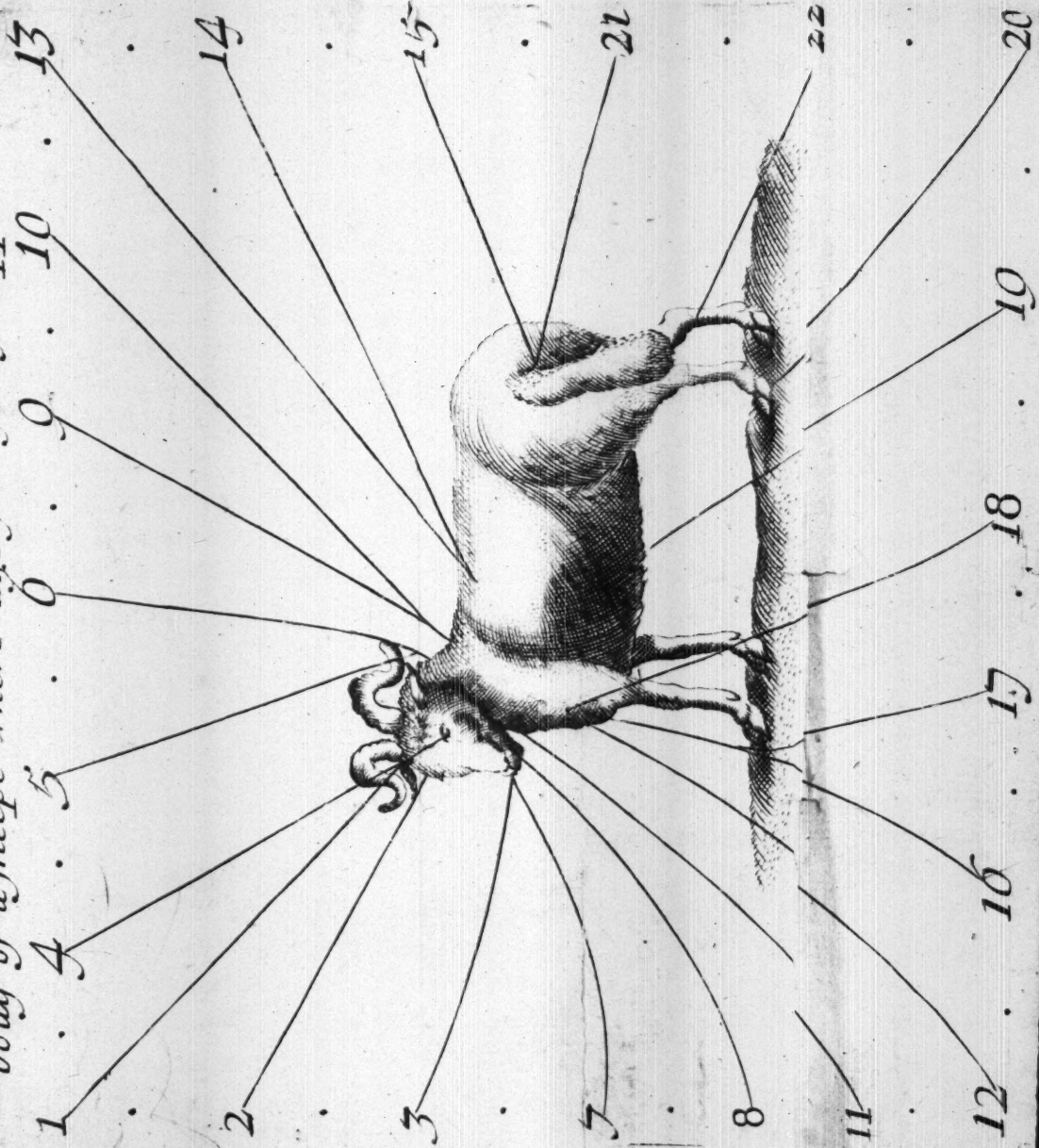
AS this kind of Cattle are greatly in request, in most Countries, so it will not be amiss or impertinent to lay down some Experienced rules, as well for their Production and Increase, as for their preservation from Sicknes and other Casualties.

And first, as to the Breed; in this case you must, if you intend to have a good breed, choose your Rams and Ews the best you can procure, and to know a Ram for that purpose, observe these Directions.

Let your Ram be of a large stature, long bodyed, his Belly full, well armed with wool, his Taile, long and bushy, his Forehead, broad and black, his Eys, black and sparkling, with much wool growing
about

The Country mans Ounce knowing the several places in the

body of a sheepe where dyseases usually happen



about them, his Cods, large though not too much hanging, his Loyns and Eares, large covered with woole in a bundance; all the wool, unless that on his Forehead, white, his Hornes, large and bending, with the Tips from him, the Tounge and the Pallate, cleare and white.

The Ewe, must have a deep Belly, whit and shining wool, uery soft, a long Neck, great Dugs, smooth Hornes, large black and Gold-coloured Eys, long and lean Legs, and a Taile long and well covered with wool: And thus much as to aduice, for chusing good breeders.

2. *When the Ewe ought to be Covered, and how.*

Having carefully chosen your Ewe or Ewes out of the flock, at two years old let her receive the Ram; for if before she chance to be Covered, the Lamb will prove weak and unfit for a Breeder; therefore in that case, the best way is to dispose of him to the Butcher: A Ewe will bare from two till seaven years old; though, by my aduice, keep only her first two years production for a stock.

Those

Those Rams that you would have to
 serue your Ewes, before the blossom, must
 be kept in good Pasture, for the space of
 a Month or six weeks ; that so he may be
 the better able to performe, and if the Ewes
 seem averse, to oblige them to suffer the
 Ram, scatter in their pasture Oynion blades
 or Knot-grass ; for the Ram of himselfe
 rather covets the old then young Ewes ; by
 reason thay are easier wooed. Divers are
 of opinion that if you knitt the right Bone
 of your Ram, upon his leaping the Ewe,
 you shall have a Ewe lamb, if the left, a
 Ram lamb ; allso, that their Blossoming
 with their Faces to the North-wind, causes
 Ram lambs : And to the South, Ewe lambs :
 The Ram, as soon as all your Ewes have
 Conceived, must be taken from them, least
 by attempting to leap them, he cause them
 to miscarry : The best time for their be-
 ing Leaped, is from the third Ides of *May*
 till the thirteen Callends of *August*. If a
 Ewe goes aloane, the Thunder will afright
 her, and cause her to miscarry : They goe
 ordinarily with Lamb but five Months, and
 the longest not above 160 days, and many
 times bring two Lambs at a time, and some
 times three or fover ; breeding twice a
 year : Therefore above allthings, in their
 yeanning

reaning time, lett them be carefully observed, for often through weaknes, occasioned by cold or the like, they bringforth with great difficultie.

3. How to order your Lambs after they are Cast.

When your Lamb is cast, set him upon his Leggs and direct him to his Dams teat, causing him to take it in his mouth, by spitting some of the Milk into it, after you have milked out the first milk called Colostra or Crude-milk; very hurtfull if taken by the Lamb.

If your Lamb refuse to open his mouth, open it and put the Teat into it, and then if you perceive him to trifle with it anoint his lips with Sweet-butter and Hogs-grease.

If his Dam chance to die, and you have not a spare Milch Ewe to put him to, you must Suckle him through a Horne; but if the Dam lives, then they must be shut up together, that the Dam may both know and cherish him; but when you perceive your Lambs to wax wanton, then sever them with Hurdles, and after ten days, with soft strings, they must be tied to little stakes

stakes, if they appear wanton and unruly, least by their overmuch Levitie, they not only grow Lean, but hurt them selves: And before to sever the weaker from the stronger, when they are in the house ; suckling them Morning and Evening, before their Dams go to pasture, and after they return, so vsing them untill they wax strong, and then feed them in the house with Clover-sweet-grass, and Bran mixed with Flowers, after which, if the weather be warm, turne them out with their Dams into pleasant Pasture.

After you have Weaned them (which if the weather be warm, you may do at seven weeks or two Months) you must be sure to keep them high, least pining after their Dams they fall away, or become Sick or Squezie stomacked : *Varo* is of opinion that to geld your Lambs, the best time is when they are five Months old ; but my Opinion is, that at six Weeks or two Months is best, for then their is least danger ; and the Lambs being once recovered of the forenesse, will feed the better. The manner of Gelding most securely ; is to take the Cod between your fingers, and having slit one side, draw the Stone forth, and with a cleft stick grasp fast the Sinus, having

having a Sereing-iron ready, fear of the Stone, and so serue the other; after which, put up the Sinues close, on which the Stones hung, anointing the Cod well with butter mixed with Salt: Gelding them in the waine of the Moon.

If you designe a Ram-Lamb to keep for breed, Observe to make choice where a Ewe has two Ram-Lambs; and he will prove a special Breeder, if he be of the right Collour, and have the marks afore-said.

4. Rules to be Observed in the Feed, and Pasture, of your Ews and Lambs.

The most thriving pasture for Sheep, is that which has been turned up with the Plough; and is againe coated with fresh and sweet Grass, called *Fallows*: The next is that which groweth upon drie Meddows. The Grass growing upon Morish and wet Marshie ground, is altogether to be refused; as likewise that adjoyning to Fens and Lakes. The Downs and Plaine Champion Fields always produces the best Sheep; both in Health and Growth: And if at any time they carlessly Graze, and as it were neglect their Pasture, to Remedie it, sprinkle Salt

Salt in a Trough near their watering-place, and by Licking it, it will renew and sharpen their appetite ; for, whereas Sheep wax soonest fatt with wattering, as *Aristotle* affirmeth, and Experience teacheth, you must every fifth day permitt them to have a peck of Salt amongst every hundred ; by Licking of which their Health will be greatly preserved, and their Milk increased : Moreover, against the Winter-Rott or Hunger-Rott, you must provide to feed them in Cratches. They are best fed in warme Countries, with the Leaves and Brouings of Elme and Ash, and the Latter-Hay or After-cut, by reason it is more soft and sweet then any other. And thus, with the Advice of Renowned *Virgill*, I shall conclude their manner of Breeding, Feeding and Ordering ; and proceed to prescribe such Medicins as are requisite to Cure the Distempers in this kind of Cattle.

*When Summer faire, with Western-Winds, doth call
Your Lustie Flocks to Woods and Pasture all ;
Send them betimes, when day at first does rise,
And Hoary Dew on bended Grass thick lyes :
From thence, when at the fourth houre of the day,
(The Sun high Mounted) makes them dry, convey
Them to fresh Springs, where pleasant waters bee,
And make them drink in Troughs of Oken-Tree.*

A Treatise of Distempers in Sheep, and their Cures.

1. What Sicknesse Sheep are most Incident to.

The Distempers Incident to this kind of Cattle are divers, as Cough, Scabs or Scruyness, and Red-water, which are Occasioned by an Extraordinary Paine in the Head; as also proceeding from a Plagve or Infection; and are all of them Mortal unless taken in time: therefore, if you perceive any of them Afflicted with the said Distempers, seperate them from the rest without delay, least thereby the wholl Flock become Infected. Divers other Distempers befall them upon their Eating unwholsom Herbs, Drinking Dirty or puddle Water; Infections of Aire or Licking up any Poisonous thing. But of them in their order.

2. For the Head-Ach or paine in the Head, a Cure.

This Distemper, by some called the Staggers, is Occasioned by

by Heat or Cold, and sometimes by both, which contending in the body for Mastry, turne to a Surfait: The Remedie for it is six grains of Afafetida, two sponfulls of the juce of Sage, and halfe a quartern of Wine-Vinegar, heated together; and given the Sheep as warm as it can be well indured, when he is fasting: This likewise, if you add two sponfulls of the juce of Rye, and Rose Leaves, Letting the Sheep Blood in the Temple Veines, Cures Giddynesse in the Head.

3. *Loss of Cudd, how to Restore: Agues, Rhumes, Cattarrhes, and Cough, how to Cure.*

If the Sheep are defective in chewing, and their Cudd is gone; take fine soft Clay, mould it with Mans Urin and poudre of Allum, into little balls; thrust them down their throats, and in so doing six or seaven times, the Cudd will be Restored.

In case of Rhumes, Cattarrhes or Cough occasioned through intemperateness of the Aire or unwholsom Feeding; take an ounce of Dill-Seed, a like quantity of Bayberrys, a handfull of Wervine, and two ounces of brown Sugarcandy; boile them, when
brused

ruised, in a pint of Sider or Verjuice;
and give the Liquid part Fasting, as hot
as can be well Indured: and by so doing
five or six times, the Cause will cease.

*4. Distempers in the Eys, paines in the
Teeth, and Agves; how to Cure.*

For any Distemper in the Eys, blow
into them Pouder of Allum, Hartshorne
and Bolearmorick, washing them before,
and after, with water Distilled from Ey-
bright, Hony-Suckly-leaves and Sellen-
dine or White-wine, wherein they have
been boiled,

If your Sheep be troubled with swelling
on their Gums, loos Teeth, or paines in
the Teeth, mostly occasioned through
Cold, or Surfaite, Lanch the Gums; rub
them with Salt-peter, or Spanish-Salt, and
afterwards wash them with the Juice of
Sage, pouder of Allum and Cows-milk,
well warmed; and give them the Juice of
Hyfop and Hony to drink, in coole Spring-
water.

To Cure the Agve in Sheep or Lambs;
blood them between the Claws. Suffer
them not to drink for twenty hours, and
then give them water; and a third of wine,
wherein,

wherein, Pepper, Comfry, and wild Tan-
si, have been boiled.

5. *The Plague, Rott, Boiles, Apostumes,
Scab, &c. Their Several Cures.*

If the Sheep be afflicted with Plague,
or Rott; Immediately separate the Sound,
from the unsound, and wash them with
water, wherein Baume, Rye and Sow-
thistles have been boild. Give them Vine-
gar to drink, wherein, Peletory of spaine,
Saffron, Palipodium of the Oake, Bith-
Wort-roots, and Bugloss, have been
boiled. Sweeten the Liquid part, with
Sugar-candy, and let the Sheep afflicted,
receive it as hot as may be, when they
are fasting; And so serve them five or six
days successively: Feeding them with dry
meats. And if the Distempers have not
proceeded too far, Even to what is ter-
med Incurable, This Medicine will re-
store health.

To Cure Boiles, Apostumes, or Ulcers;
if they be not drawn or come to a head,
you must Oblige them to it, by mingling
Wheat-flower, the Yolks of Eggs, and
Tarr together; and applying them, Plas-
terwise, to the place Grieved; then prick,

or

or Lanch them so that the Corruption may come away. Then take an ounce of Turpentine, Burnt-salt, a like quantity; and as much *English* Honey; an ounce of Rosin, and a quarter of an ounce of Galbanum: Make them into a Salve, over the fire, and applie it Plasterwise to the Grieved part: Anointing it first with Oyntment of Tobacco.

For Scabs, appearing within the Skin, or without, take a quarter of a pint of the Juice of Hysop; the like quantity of Chamomile, a quart of water, wherein Tobacco has been steeped; two ounces of Brimstone-flower, Fern-roots a handfull, and a quart of Urin; adding two handfulls of Salt; boile them together, and with the Liquid part, wash the place Grieved, giving them Salt and water at the same time to drink; keeping them as much as may be from Green meats. This likewise cures the Itch, and other, the like Distempers: And by adding six ounces of Tar, it kills Maggots Lice and Ticks.

6. *Purfiness or short Wind, Swelling of the
Belly, St. Anthonys-Fire; and Diseases
of the Lungs: Their Cures.*

For the first, take two quarts of Vinegar, two ounces of Liqvorish-pouder, the like quantity of Treacle, half an ounce of Methredate, a handfull of Cardus, and a handfull of Lupins: Boile them well, and give the Beast grived a pint at a time, after he has been kept twelve hours Fasting. And so doe till you find his Breath recovered, and the Rhumes, that caused such purfines, dispelled; ading to this receipt, two heads of Garlick, and a handfull of Coltsfoot, it Cures most distempers in the Lungs.

If your Sheep be afflicted with the distemper or forrance, called St. Anthonies-Fire (named by the shepherds, the wild fire; because it runs from place to place without the least stay) Bathe them with Goats Milk and the juce of Brionie; giving them warme water wherin, Scabeous has been boiled, to drink.

If your Sheep be afflicted, with Swelling in the belly, which some times happens even to Bursting, and is occasioned either by

Eating

Eating of unholsom Herbs, or licking up
 Grubs, Red-wormes, Spiders, or swal-
 lowing, by too hasty drinking, Horse-leech-
 es. In such a case, take a pint of Salled-
 Oyl, blood the Beast in the Taile; put
 some of the blood to the Oyl, as also the
 Juice of Rve, and powder of Brimstone,
 and pour it down their Throats: Keep-
 ing him, or her, stirring the mean while.
 If the Claws be Lame, or broke by any
 accident; take unslaked Lime, Sope and
 Hogs-Lard, bind them up therewith, and
 bath the Ledge and Foot, with hot
 Neatsfoot-Oyl: If the Hornes are loose,
 to prevent their sheading (having thrust
 them on as far as possible) anoint the roots
 of them with Juice of Houlleek, Verdi-
 greas, Turpentine, and Hogs-Grease
 melted together.

To supple and Cure broken Joynts,
 Spraines, Renches, or Fractured Bones,
 first (having put them into their right
 place) with an Oyntment, made of Bees-
 wax, Turpentine, Deers-suet, the Juice
 of Mugwort, Stone-pitch, and Melliot,
 suppling the place grieved, also, with Oyl of
 Earth-wormes; as hot as may be Indu-
 red; tye it up with a soft Lint, very
 strait; and by renewing the Vnguent
 every

every other day, the strength will be restored, as at first: And thus much I have thought fit to lay down, relating to the Breeding, Ordering and Curing, the most difficult and dangerous Distempers in Sheep; from which I shall proceed to Treat in the like nature, of Swine. Those yet remaining sort of Creatures, so necessary, and usefull, to man.

CH A P. 5.

A Tretis of Swine ;

*And first, of the Marks whereby to chuse
good Breeders ; and how to order your
Breed.*

TH E R E is no Creature so profitable to the Breeder, in Affording so many Dishes, to furnish his Table, as the Swine, therefore, worthy to have place in this Tretis : Now to procure a good Breed, on which consists the main ; let your Bore be short and well set, his Mouth not long, but drawing upwards, Brest and Shoulders broad, Ears short and large, his Stones large and even, hanging down, his Bristles erect, and for the most part standing upright, his Colour white, or Inclining to Reddish. Let your Sow be long of Body, large Bellyed, with many Teats, broad flattocks, long and large Ribed, little Headed,

Headed, small Eyed, short Leged ; and of Colour whit.

The best time of the Sows being Covered, is when she is fourteen Months old ; the Bore, that covers her, being no less then three years old. And suffer him not to Cover your Breeders after five years ; nor they to breed after four, unless to dispose off young : About Candle-mass (observing it be in the Increase of the Moon) is the best time to let your Sows be Covered ; then see that the Bore serve them well, three or four times a peice, and although one Sow may bring fourth above ten Pigs ; yet it is not convenient to let her rare more, if you designe them for a stock : At a year old Geld your barrow Pigs, and at eight Months Spay such Sow Pigs, as you intend to Fatt for Bacon or Pork ; Besure to Cut or Spay them in the decrease of the Moon, the weather being open and mild, or (if you think fit) you may much sooner then I have mentioned, doe this office ; but then they will not be near so large.

To Fatt your Swine, keep them close in a warme Sty, where there is rather a glimmering, than a perfect light : Let them have daily fresh Liquor and their meat Give

meat (which you must give them thrice a day) be Pease, Beans, Mast, Acorns, Pollards, boiled Carrots, or Parsnipes, according to the production of the Conntry: The better to provoke them to drink put a handfull of Salt, and Barly-meale into their watter: And in so ordering them, they will be Fatt in twelve or fourteen days.

2. *Of Diseases in Swine, what they are, and how to Cure them; and first of the head Ach, or Sleepy-Evil, Measles, Ague, or Feavour; and Pox in Swine.*

If your Swine be afflicted with the Head-ach, or sleepy Evil, bleed him under the tongue; rub his mouth with Salt, and give him to eat (if the time of year will afford them) Lettes-leaves, or for want of them, Cabidg-leaves, and Fetches; making him to drink Whey, where in Rosemary, Lavender and Vervine have been boiled.

If the Measels, which are occasioned by unwholsome, or excessive Feeding, has seized them; take a hard Brush, and dipping it in cold water, rub them all over: Give them Parsly-roots to eat, and put

pouder of Allum in their water, as also the Juice of Rue ; and let them Feed moderately ; suffering them to be in the open Aire as much as may bee.

The Swine being afflicted with Ague, or Feavour ; let him blood in the Taile, and give him warme-water, thrice a day, wherein Pepper and wild Parsnip-roots have been Boiled : Suffer his Diete to be very Fine, though Slender.

To Cure the Swine-pox, take an ounce of Pepper, as much Methredate, or Dioscordium, boile them in half a pint of sweet Oyl, and a pint of Sider ; sweetening the dose with Hony , giving him it warme.

3. *Rhumes or Cattarrhes, Plague, or Diseases in the Melt, and Diseases in the Eys ; their Cure.*

To Cure the first of these, take Brimstone, and Burgundia-pitch, put them on a Fireshovel of lighted coles, suffering the steem to goe up the Nostrils of the Swine ; at the same time giving him drench, made of Garlick, Pepper, and Rue boiled in New-wort.

For the Plague, or any Disease in the Melt ; proceeding from eating Noyesome things ;

things ; give your Swine three ounces of Hony, two ounces of Bees-wax, an ounce of Ginger, and two ounces of Corriander-seeds ; boiled in a quart or three pints of New-milk ; let him take them Fasting, for three mornings successively.

If the Swine be afflicted with any disease in the Eys ; wash them with the Juice of Hous-leek, Bittony , and Sellendine, blowing in afterwards , the powder of Sepia, burnt Allum, or Alloes. And applying the Herbs, aforesaid, Poltewise, to keep it in.

4. *To Cure the Flux, Diseases in the Gaul, Belly-ach, and Husking-Cough; Experienced Remedies.*

To Cure the Flux, occasioning extraordinary Loosness in Swine : Take two ounces of Gall-nuts brused, as much Starch, a handfull of Bittony, and an ounce of Turpentine ; Boile them all in a pint of Milk, and a quart of Vinegar , and give it the Swine to driuk, at thice, three successive mornings.

To Cure the Belly-ach, take an ounce of long-Pepper, two ounces of Fenell-seed

an ounce of Fenegreek-roots , and two ounces of Hony ; boile them in a pint of White-wine, or stale-beer, and give it the Swine Fasting ; suffering him to fast seven or eight hours after it.

To cure a Cold, or Husking-cough ; boile a handfull of Colts-foot in a pint of water and Hony ; adding thereto, a quarter of a pint of the Juice of Longwort, two ounces of Licoris-pouder, and a quarter of a pint of sweet Oyl ; let him drink it warme at twice *viz.* Morning and Evening.

5. *Swelling in the Neck, Throat or Body ; Lameness in any part ; how to cure.*

If your Swine swell in any part of the Nick, Throat or Body ; let him bleed in the Taile, and under the Tongue. And apply to the place Griev'd a Plaster of Burgendia-pitch, yolks of Eggs, Wheat-flower, and Bees-wax ; giving him in his Meat, Coriandr-seeds, and Hors-redish dried and beaten into pouder.

In case of any straine, Bruse, Claw-slip, Bone broken, or out of Joynt. I refer you to tho same Remedie, as is prescribed for the Sheep. And so leaving the Swine ; I shall proceed to Treat of the Goates, an other useful Creatures.

CHAP.

CHAP. 6.

A Treatise of Goats.

1. *And first how to know their Goodness, &c.*

THIS amongst some is counted a wild and unprofitable Creature; but certaine there is great profit arising by it; as their Flesh for Meat, their Skin for Leather, their Milk for making Cheeses, their Haire for making Ropes, Sacks and Garments; not Rotting by moisture, nor being easily burnt with fire. And of Goats, there are divers sorts, according to the Countrys, where in they are bred; but above all, the *English* Goats are accounted the best: And therefore, of them only will I Treat.

If you would chuse you breeders; let the Hee be weell Horned, Bearded and long Headed; his Main thick, his Neck short, his Legs Fleshey, his Eyes great, and some-what looling. Let the shee have large Udders, a long Body, deep Belly, short

Legs : And let not the first exceed two years, nor the last 18 months when you put them together, nor suffer them to Ingender after four years, if you intend them for breed : The best time for the Females to suffer the Males, is about the middle of *February*; and their time of going with young, is Five months and odd days ; little differing in that matter, from the the Ews : Most of them bringing forth twice a year, two at once, and sometimes six ; and those that Bare twice in a year, are the best for the stock. If you intend to breed them into good order, you must buy the whole Flock, and they will thrive the kindlyr. In Autum, sever the Hees from the Shees, and when the Shces have brought forth, if they are not two years old, put the kids to Goates of that Age, to be suckled ; and if the weather be cold, keep them in houses or Cots, tying them to little posts, and parting them with Hurdles ; least they by their unrulyness, hurt themselves. Let the place be paved with stone, and kept very cleane ; and where ever they Feed, suffer not above 100 to remaine together. They are hardy Creatures, and will live upon short Grasse, or Leaves, Thistles, and the Brouzing of Trees.

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Frees. And many are of opinion, they draw their Breath at their Ears ; for that if their Nostrils be stopped, they bare it patiently : Those that have no Hornes, if Females, give the most Milk, their Age is known by the Ruggedness of their Hoofs, and Horns : The Diseases they are most subject to, are Agues, Feavours, Murraigne and dropsie ; gotten mostly by unwholsome Feeding ; and contrary are these distempers in them, then in any other Beast ; for as other beast languish with the sickness, they without the least sign of being wasted, fall down dead one a sudden.

2. *A Cure for the Ague, or Feavour.*

Few Goates are free from these Distempers ; especially in the heat of Summer, and extreame ty of winter, to Cure which, having let them blood, take the Roots of Fern, great Thistle, and Reeds ; of each six ounces, Wood-sorrill, and Corriander and Cittern-seed, of each two ounces ; boile them in runing-water, and give the Liquid part to the Beast grieved, or for want thereof ; take Bean-flower, Allum, and Pollipodium of the Oke, of each

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each a handfull ; and boile them in a Gallon of Whey : Give it to the Beast at four times, pretty warme ; and it will effect the Cure.

3. *An excellent Remedie for the Murraine, or Pestilence.*

Take two ounces of the Juice of Rue, a like quantity of Housleek, a handfull of Elder-leaves, Buds, or Bark, eight or tenn Bay-leaves, a pint of Sallad-oyl, a dram of Saffron, and half an ounce of Turmerick ; add them to a quart of Stale-Beer ; Boile them, and give it the Beast Grieved ; at four times, having first strained it ; and seperate them, to prevent further danger.

4. *An excellent Remedie for the Dropsie.*

If your Goats are troubled with the Dropsie, Lance the skin a little under the shoulder, and put between it and the Flesh, a Rag diped in Oyl of Bays ; And the waterry Humors flowing theither ; will Evacuate ; if, at the same time, you give them Hoop-tops to Eate, and suffer them to Brouse on Oake, or Beech. As for
what

what other Distempers, or Grievances these kind of Cattle are Incident to, they concord with those of the Sheep: Therefore, for Brevity sake, I shall reffer you to that Tretis for the further Cures.

CHAP. 7.

Of the Improvement of Arrable, and Pasture Lands, &c.

AS we find in sacred writt, that Tilling the Earth was the first Labour God Assigned to Man; so it is Apparrent that it is the most necessary. For though the Earth as a common Mother, out of her own Bounty, affords us store of all things; yet she does it nothing so kindly; unless wee performe our part in Managing, and dressing it to the best advantage; that thereby, with Gods blessing, it may bring forth Increase in abundance, to sattisfie our Necessitys; and for the supply of all Creatures. And first I shall begin with the Measurs to be taken, in ordering and Improving Arrable Lands. Having designed a peice of Land, whether

whether Inclosed or open, it matters not for Oats, Barly, Wheat, Rye, Peas, Beans, Fetches, or any other Graine. Consider well the constetution thereof; if it be cold the year before you Plough it, Mearle it over, and flow it with water, if it be possible, by laying open dikes Trenches. After which put Sheep to Graze therein, and scatter wood-ashes, if you can get them, over it; by which means, the weeds, if it be subject to any, will be destroyed: Then Plough it over lightly, and suffer it to ly two months, that the Turfs may root; after which Plough it as deep as may be; and with an Iron Rake goe over it, drawing away all the Saord that remaines, and Fining the Mould by breking the Clods; then sprinkle over it slaked-lime; which having done, draw your Furrows as deep as may bee, laying the Riges of the Land high, to scot off the water; and so suffer it to continue a week, before you sowe your Seed; the which, if it be Oats, Barly, or Rye, sprinkel with warme water, wherein wood ashes, and the Foot of O, I have been boiled: Scatter the Graine as even as may be, and afterwards draw over it a Harow, wherein bushes are fastned; or

goe over it, if you will give your self the paines, with an Iron Rake. When the Corne is pretty high, put in your Sheep and suffer them to crop it Transsiently; but let them not lye in it, nor eat too near the roots. And you shall find your Labour Recompenced with much gaine: An Acer so used, baring Treble the quantity it will doe otherwise.

If you Sow Peas or Beans, make Ready the Land as for Grane: Lay them in with a drawing Hoe, but not too deep nor too thick; sprinkling upon them, before you cover them, with the Mold; Earth, dug in some hot Garden; or the core of Ant-hills, or Mole-hills, and so cover them. And when they peep above ground, to preserve them from slugs or Snailles; which abound in wett Lands, scatter Slaked-lime, or Wood-ashes, upon the Rills, when either of them grow up to rankness, crop the Tops; And in so doing, you will have an exceeding Increase. For Fetches, Or Clover, you may Sowe them at Randome, as you likewise may Hemp-seed, Rape-seed, Turnip-seed, Parsnips, Carrots, and the like: Observing to order the Ground, as aforesaid; but if it be warme Rich-land, good Tillage alone will

will answer your expectation. Divers ways there are to make Land good, though never so Stony, Sandy, or full of Chalk ; by coating it over : But that being so chargeable, troublesome, and of so shor a durance, is held by most unprofitable. The Corne used as aforesaid, will be preserved from Blasting : And to prevent the Crows or daws falling on the Corne unsprung ; dig divers littl holes in the most Obuious places, and stick them round with Crow, or Daw Feathers, and scatter Feathers in the bottom , and none of them will light in the Field ; although, as in great consternation, they will hover over it, with a hedious noise : To prevent Pigeous, Rooks, or any hurtfull Foul, not named, from destroying your Corne; Lay traines of Gun-pouder and Brimstone-flower, upon the Riges of the Land, and fire them : Hanging Muscl-shells upon a Pole, or a Wind-mill ; which by the force of the Wind, may make a ratling noise to fright them thence. When the Corne is grown up ; be carefull to take away the weeds that choak it ; and that no Trees, overhanging, drop thereon : And in so doing, you will receive great Increase. When the Corne is taken off, pul

up

up the stubble by the roots, and burning it, scatter the Ashes upon the Land; when you have had four Crops, four successive Years; you may dig it two other Years with a spade; with good success, Leaveling it by that means, for Pasture; scattering over it, a small quantity of dung: And so you may continue it, six years Arrable, and six years Pasture; for so long as you please.

Pasture Lands being of great use; I noways think it amiss, to lay down rules for it's Improvement, *viz.* If the Land lye low and wet, subject to Flags, Rushes, or Mareblubs; and, if any conveniency of far, digg a deep Trench in the lowest part, and into it run divers little Trenches: And cast over your Land Lime, and Sea-cole-ashes; so that the Trenches, drawing away the cold slimey moisture that feeds them: The Lime and Ashes will heat the Ground, and kill them, which done, either burn them, or pull them up by the roots: And keep your Trenches well cleansed; and scatter on the ground Hogs-dung, Horse-dung, or Hens-dung, mixed with fine Mold. And the cure will be effected; but if it lye very low, you must raise it with a Plough; leaving it as hollow

low as may be; that so the water may the better sink away. As for Ploughs, there are divers sorts used in *England*, according to the custome, and manner of the Countys wherein they are made, or the nature of the Land: As first, the plaine Plough, second, the double Plough, ploughing two Furrows at once, the single-wheel Plough, the double-wheele Plough &c. The Harrows likewise, are divers; some larger some smaller, as occasion requires. But to the purpose, having layed the Land well, consider of what constitution it is, if cold, use it as aforesaid; if hot or Sandy, Mudd it over, and lay it open to the water, as much as may be. If troubled with Moales, Obserue in *March* or the begining of *Aprill*, where the greatest Hills are, suddaieny open them, and you will find the Moles therein; when having killed them, lay Turfe upon the place. Or to take them in greater numbers, set pot Traps in the Ground, near the Hedgerows; and put into them Earth-wormes; and the Moales will enter into them, in great number, the pots being let into the Ground, and covered with Turfe: Or if conueniencie permit, Trence the Ground, and let in the water; and they will fly before

fore it ; divers other ways there are to destroy them, so Vulgarly known that I conceive it unnecessary to make mention of them.

If Ant hills Incumber your Pasture, or Grass-ground, open them, first paring off the Turfe, and taking out the coare ; then making little fires thereon, burne Brimstone and Pitch therein : And the Ants will never more Infect the place.

If the ground be troubled with Sow-thistles, Goose-tansie, or Fern ; the way to destroy them is, by pulling them up by the roots, or chopping them up, and scattering Lime where they grew, or by often striking off their tops ; by which last means, the sap hastily recoiling to the root, over charges it, and causes it to dye.

If Broom overrun your ground ; take the former measures, and so you may for Goss-brakes, Briers, or any other thing that is Incommodious to the ground, in hindering the growth of the Grass, &c.

To prevent any noyance by Weeds. When you lay your Fields Fallow, lay Soyl thereon, in Rainy-weather ; that so, whilst the strength remaines therein, it may soake away ; by which means, one Load will have effects equivelent to three ; raising

raising Immediately a good Soard, which prevents the growing of Weeds, &c. After which, with a Roaler in moist wather make it leavel; and after the Roaler scatter Wood-ashes: And in extraordinary wett weather, suffer not any heavy Cattle to Feed therein, least they tread up the roots of the Grass; and frustrate your expectation. If you designe to Mow your ground; the best way is to take up your Cattle, somewhat before Lady-day, in the season be any thing foreward, or else by biting the tender tops, they will greatly hinder your Hay-Harvest: And prevent the second Mowing, unless your ground be exceeding low. If any place prove bare; then, with an Iron Rake, scratch it over; and scatter Hay-seeds of the precedent cut: And suffer not your Swine to enter; and by so ordering your Land, you will find the Improvement double: What otherwise it would be.

CHAP. 8.

Of Fruit-Trees, &c.

CERTAIN E it is, that the Antient Science, or Art of Planting; and thereby refining wild Fruits, till they were brought to the perfection they are: This may be accounted, amongst other things, exceeding necessary, and profitable to us. An occupation, in which man was Imployd, as soon as made: For *Addam* was accounted no other then a Gardener; placed in the Garden of God, to look after the happy Trees. And for his Labour, possess the Fruits of every one; unless that of the Tree of knowledg, which was exempted more to try his obedience, then for the delicateness thereof. Now my design is to Treat of such Fruit Trees only, as are Planted in Orchards in this Country; and not to meddle with wild Frut-trees, nor Fruts of any other Country growth. And first I shall shew you the best Method to bring your ground, designed for an Orchard, into good order.

Having

Having chose a peece of Rich leave ground, which has long layne Follow and in which you perceive the Grasse to flourish more then the Weeds, and that the Mould smells sweet; Inclose it with Quicksets. The which, if you would have flourish, order after this manner, viz. Having cast up a bank, water it well, and suffer the Ditch on the outside to be very deep; then open in the Bank, three little Trenches, one a foot above the other. And thrust into them your quicksets well rooted, and the tops just cut off: Setting them four Inches, or if they be any thing large, six Inches a sunder, and couer them half their length; not suffering any Cattle to come at um. Set them in the Moons Increase the latter end of *February* or beginning of *March*, if the weather be open: Having thus done Observe where they prosper not, and plucking them up, Set others in their places, and in three years you will have a Hedge sufficient to Defend your Ground from all anoyance: Then choosing a corner in the warmest part, Dung it well and Trenching it, cast up little banks, on which set slips of Frute-Trees, watering and loosening the Earth about them frequently; and when they are grown to any perfection

Leave section, marking in the Rind which part
 stood to the North, and which to the
 South, take them up Earth and all, and
 having dug holes in straight lines, cross or
 long ways of your Orchard, place them
 therein, just as you took them from their
 native soile; when having suffered them
 to stand a year, and well fastened in the
 Ground, with a fine Saw cut off the tops
 about three foot from the Ground, having
 first opened the Root and Duged it a lit-
 tle, and then with a fine Chisel pare the
 place, where the Saw has gone, smooth; at
 what time, making a Cleft, put in your
 Scien or Sciens so that their Bark touch
 the Bark of that whereon you Inoculate;
 making Clay, Hors-dung, and dregs
 of Oyl, temper them well together, and
 with a Svet-skin Bladder or fine Rags
 wrap it fast, round the bottom of the
 Scien, so that neither Wormes, Wind,
 nor Raine may enter; and Tie over it a
 visp of warme Hay, and suffer it to con-
 inue six weeks, at the end of which the
 Scien will be Incorporated unto the Stock.
 Others there are that bore a hole slope-
 wise to the Heart of the Tree, and thrust
 in a branch of such a Tree as they think
 most suitable to the Stock; and stoping it
 close

may be Grafted, as aforesaid ; looking well to u'm, and keeping u'm warme. Another kind of Inoculating there is, which is properly called Implastring, the manner thus: With a sharp knife, take a Bud from the side of a Tree, with a good quantity of the Rine sticking to it ; and cutting off a like quantity of the Rine from the Branch of an other Tree, clap it on, binding it close with Moss and Clay, and it will Incorporate: And thus much of Grafting, which indeed is the nicest part of Orcharding, and the Original of all good Frute, for by it, and well ordering, all Frute-Trees were reduced from wildness, and Improved.

Having Grafted your Stocks to your content, the next thing to be considered, is carefull looking to your Trees, that thereby they may prosper: Now to effect this, you must every Autum, so soon as the Leaves are fallen off, bare their roots, and then stop them up againe in open weather ; having first layed Dung thereon, and sifted fine Mold ; which done, keep them clear from Moss, and every twenty day, make fires with damp straw, that the Smoake may come amongst them: Observing about *March*, if the weather

be not Frosty, to bare their roots againe.
 and cut off the Succors, or Saplings; tak-
 ing away the cumbersome, or superfluous
 Branches; and flitting the Bark, if you
 find they are straitened; but slit it not if
 the weather be Frosty: The Roots ha-
 ving layne bare a week or therea-
 bouts, take Soot, or drags of Oyl,
 and Urin, mix them with water, and
 boiling them together; poure a small quan-
 tity to the Root of each Tree, and cover-
 it up with fine Mold, over which, lay
 green Sword: When they begin to Bud,
 and you fear a blast, or that wormes, or
 flies should destroy the Blossoms; take
 wet Hay, and make divers little fires, put
 into them Brimstone and Pitch, or Rosine
 and Turpentine, so that the smoake, dri-
 ving with the wind, may enter amongst
 the Trees; and it will wonderfully pre-
 serve them, in so much that you will have
 fruite in abundance; when your Neigh-
 bours, who neglect so to do, shall have
 little or none: And by such means, your
 Trees will be preserved to a Miracle;
 specially if you suffer not one Tree to
 drop upon another, or two much over shad-
 ow the other: Nay, for the better in-
 rovement of the ground, you may, be-

tween each row of Trees, set Beans, Strawberries, Roses, Artechoks, Pease or sow Corne: And there is nothing more provident in this nature, then to set Hedg-rows of Frute-Trees in your Corne-fields for by so doing, you may many years, or at least in two years, pay a years Rent by the income that will redowne thereby; and in many Country's it is at this day observed.

To keep your Frute from Birds, Snails, Wasp, Caterpiller, Erwigs, Ants, and coldwinds; use these Remedies, *viz.* To prevent Birds from spoiling the Buds, and Frute, when its Ripe; set up Clack-Mills to shoot some of them with Cross-bows, or Hand guns; and hang them up in the Trees, as also, set an Arteficial Sparrow Hawk upon a pole on the highermost Tree; and they will not settle, at least not so boldly: Snails, chiefly devoted to Wall-Frute; to kill or prevent which, put Slaked Lime upon the branches, and they will not touch them: To kill the Caterpillers, smoake them as I have before directed; Wasps, you must destroy by finding out their Nests, and pouring hott water therein; or hanging pots upon water and sugar in the Trees; and as for

bbing, they will drown themselves: To
 destroy Ants, that creep up the Trees,
 and devour the Frute, having found their
 nest, pour scalding water thereinto: Er-
 rors are taken by laying Kixes about the
 roots of the Tree, into which when they
 are crept, fire them: Against Cole winds,
 there is no Remedie, but good shelter, by
 Elms, Oaks, Hills, Houses, or the like.

Three Diseases there are, especially, be-
 longing to Frute Trees, viz. Mossiness,
 Bark-Eaten, and Canker; the first is oc-
 casioned by wettness, or barranness of the
 ground; and must be Remedied, by lay-
 ing the roote dry, and applying fat mold
 thereto: The second is, when through
 the poorness of the Soile, or over much
 top, the sap does not plentifully arise; to
 cure which, in the begining of *Aprill*, slit
 the Bark on both sides, mend the soile, and
 cut out of the superfluous Branches.

The Canker is natural to some Trees,
 but accidentally, Incident to all, the
 which, if it happen upon the boddy, or
 great boughs of Trees, either by rubbing,
 or bruising, cut it out, and cover the
 place with clay, mixed with Horse-dung;
 upon the small branches, cut them away;
 and many times it is occasioned by a sharp

and Virulent sap; to take away which lay Seacole-Ashes, or the Ashes of Oakewood, Nettle-stalks, and Fern, renewing the Mold: And thus I shall conclude the Tretis of Frute-Trees, adding only this advice, that whenever you Transplant Trees, Afix them in a better Mold if possible then that out of which you took them; and they will greatly Increase, or on the contrary pine away.

CHAP. 9.

Of Sowing Seeds of Herbs and Flours, &c.

GARDENS are no less Profitable than Orchards, and must be carefully looked to, if you expect Pleasure and Profit to accrue thereby. The best Ground, is that which lyeth neither too Wett nor too Dry: Not bearing any Noisom Weeds, nor subject to the North Wind: Being of light and fertill Mould which Inclosed with Quickset Hedges, as aforesaid, and having clear Water at hand either

either from a Spring, River, or Raine-
 receiving-Pond, Dig that part you intend
 to Sow in the Spring, about the latter end
 of *August*; and that you intend to Sow in
 Summer, Dig in the Spring; that so the
 Ground may be mellowed, and fit to re-
 ceive the Seed: Then make your Beds
 Long and Narrow, for the advantage of
 Weeding, laying them, if in wet Ground,
 two foot above the Ally; but if in dry
 Ground, not above a foot from them, as
 your fancy leads: Incompassing them
 with Boards and Stakes, with Tiles,
 Bricks or Banking; and scatter over them,
 in rainy weather, Beasts Dung, Intrench-
 ing, likewise, with the same; leaving spa-
 ces for the water to fall away, and beating
 them smooth, when having made the Mold
 small with Iron Rakes, and a second dig-
 ing, and takeing away the Grass, and
 Weeds, sever your Flour-seeds, Chisick
 Herb-seeds, Pot-Herb-seeds, and Sallad-
 seeds each by themselves: As for Herbs
 and Flours, some are for delight, and
 others for Phisick and Food, some proper
 for one season, and some for another;
 Therefore the times of Sowing are divers;
 but chiefly divided into three Seasons; the
 first time of Sowing, after winter, is in

March, Aprill and May; during which time 'tis proper to Sow Cole-worts Redish, Rape, Bets, Lettice, Sorrell Mustard-seed, Corriander, Dill, Garden Cresses, Oynions, Parsly, &c. The second Sowing is in the begining of September; which are Turnips, Parsnips, Carrots, Cabages, and winter Salads and such like. The third season, which they call the Summer season, the Gradeners in some places begin in *January*, wherein they set Cucumbers, Gourds Spinage Bassill, Purslane, Savorie, Endive, and the like.

Some things are Sown twice a year, viz. In the Spring and Fall; as Coleworts Radish, Lettice, Corriander, Cheruill Dill, Garlick, Oynions, and many other rootedions to be Recited: The best time to Sow these, and all other Seeds, is in the Increase of the Moon; the weather being open; now there are some seeds that the older they are, the sooner and better they spring up: As the seeds Corriander, Marjorin, Peneroyal, Garden Cresses, &c. And others, againe, change their nature, by being old, or utterly loose their substance: And in gathering your seeds, observe they be Ripe; and

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that it be done in a dry day: When your
 Herbs and Flours come up, observe to
 weed them well; and gather the stones
 from off the Beds; cast Ashes thereon, to
 kill the Wormes, Snailles, or Catterpillars,
 and tingle them, as much as may, by draw-
 ing out the weakest; then raise above the
 Roots little Hills, with a small Hoe, ob-
 serving, if the weather be dry, to water
 them Morning and Evening, before Sun
 rise, and after Sun set; if choice Flours,
 support them with little sticks when they
 are grown up; or if tender plants; as
 Mellions, Colleslowrs, Cucumbers, and
 the like; shield them from the cold wea-
 ther, with straw, and keep their Roots
 warme, with dung; setting them upon
 beds of Cow-dung, Hors-dung, and fine
 Earth sifted together, and well tempered;
 separating the Plants, when they are grown
 to any largeness: Observing in a fine sun-
 ny day, to open them a little; putting
 over them Glases, and loosening the Roots;
 by which means they will grow the bet-
 ter, and their production be rendered the
 fairer. Your Flowers, in frosty weather,
 you must cover with Mats; or, such as are
 choice and in Pots, set in a warme-house;
 as likewise, you must all tender Plants, to

Whome the season is hurtfull, making a small fire in the house; and beware that the Snow-water settle not and frees at their Roots. In spring, when the weather grows warme, set them abroad againe, and cut off the superfluous Leaves, setting up your Flours with sticks, and raising your Plants with little Crutches, casting as often, on them, as occasion requires, water wherein Hors-dung has been steeped, and in so ordering them, your expectation will be answered.

To keep your fine seeds from being destroyed in the ground, by Garden-mice, or Insects, mingle with them, the Flower of Brimstone; and with coarse seeds, the Sopers-Ashes, or Lime well flaked: And thus much as to these particulars.

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CHAP. 10.

*A Treatise in perticular of Hops,
Flax, Hemp, Saffron, and
Licoris; containing direction
to order and Improve them.*

THESE Plants, for so I may properly term them; being so usefull at this day, I think it not amiss to give direction for their Improvement, in order: And first of Hops.

The best Land to set this Plant on, must be a Mellow-deep Mold, compounded of Sand, clay, and good Earth; not too moist, nor too dry; for a barron dry soile, or a morish wett soile, is altogether unprofitable on this occasion: When having chosen as aforesaid, and well Ploughed, or Spaded it; laying it leavell, and as square as possible may be; and then casting it up in little Hills, take the young Succours, or

Sprouts, from the Roots of the old Hills, or if you want such, take them of the growth of slip, put them foure into a hole, the holes on the tops of the Hills being six or seven Foot a sunder, that so they may not Incumber one another, nor keep out the Sun when they are grown up. And for the more commodious ploughing, set them in the begining of *April*; the Moon being in the Increase, and if possible, when the wind is Westward, or Southward; pressing down the Earth to the Roots, and not suffering any part of the dead-stalk to remaine upon the upper Joynt; nor covering over the Buds, if they be sprouted, but suffering, especially, the first years growth, to rise to the poles, which must be stedie fixed, overbending at the tops, and renewed, if any chance to break, by untwisting the Vines, and twisting them, towards the rising Sun, upon other poles. It is requisit, each pole should be twelve or fourteen Foot in length, and left rough with snags, though they must be peeled, and dryed to prevent their growing: But as for the second years sprouts, suffer not above four to grow up to one pole, and best they are that can mount above them. Observe all

the

the while they are a spinning, to draw up the Mold, and keep the Hills round, exposing them as much to the Sun as may be; brushing off the flies, and such other Insects as lodg upon the leaves: And if the weather be excessive dry, water them a little, about Sunset; and so continue to do till they blow; which is about St. *Margrets* day & Bell at Lamastide. When observe that some will turne colour sooner then other some; at what time, though they are not perfectly ripe, pull them: When you perceive your Hops to have so far changed colour, that thy are fitt to be pulled; having made a large plane place in your Hop garden, or near at hand, cut the Vines close to the Hills, and bring them away poles and all, if you can conveniently, or else cut off the Intanglements, with a cutting hook at the end of a long pole; and having brought them to the place appointed, suffer your Servants, with what speed they can, to pluck them; not suffering them to stay long unpulled, either in Raine or Sunshine: When having prepared your Kill, heated with dry wood, dry them thereon; observing when they are dried sufficiently, by the brittleness of the stalks and leaves, then (not permitting them

them to continue in the Kill more than twelve howrs, keeping your Kiln hott night and day, till such time as all are dryed) when they are taken out of the Kill, let them lye upon a Flore a day or two, to give, before you Bag them up; least they shed their Leaves and Seed; the latter being the most Material part. And when the Vines are cut clean away, bare the Roots to the middle, and so suffer them to continue (with only shaking a little Mold, mixed with Hors-dung on them) all the winter; and in so ordering, an Acre in a hitting year, which is every third year at the Furthest, may yeild twelve-hundred-weight of Hops, and in a moderate year eighthundred: Which will afford you treble the charge you are at, And thus much for Hops, that (now) so necessary and profitable Commodity.

Of Flax and Hemp, &c.

THESE two, though in effect Weeds, being of so great use as, at this day by Improvement, they are, in most European Countrys; 'tis necessary that I speake something of them, as to their further Improvement, seeing they serue to so many ends: And of thes in their order.

Flax is a slender Stalk, not much unlike to Spery, but that it Groweth higher and a little bigger, with narrow Leaves, and long blew Flowers in the top, which falling away, leave behind them little round knops as big as Peas; wherein are inclosed Yellow Seed; and this kind of Plant, or Weed, must be, if you designe it for advantage, Sowed in rich Ground; though, in this case, a slight Ploughing will serue turn. The Seed-time for it, must be in the midle of *April*, in the Moons Increase; and the Dung, wherewith you must Improve your Ground, on that occasion, must be Fat; Soile out of the Streets, or neighboring Ditches, or Ponds: The manner of casting the Seed, is at random, and when it comes up young, to keep it clear of Weeds, by which means it will soone

out

out strip and choak them; and for this purpose, moist Land will turn to the greatist Advantage. The ripeness of it is known when it turns Yellow, and the swelling of the Seeds; at what time, with carefull hands, binding the Stalks in little bundles, set them to dry in the Sun, where the Seed may fall into a convenient place, to be preserved for further use, viz. Either to Sow againe, make Oyl, feed Birds, or used in Medicines, for Internal, or External Applications, either to Man or Beast: Which Seed, if it fall not out of it selfe, you must force it out, by sundry meanes; as Carding with Iron Cards, Striking with a Stick, &c. This don, lay the Bundles in Water, where the Sun has power, Sinking them with heavy Waights, the Looseness of the Rind demonstrating when they are Steeped enough; after which, taking them out, unloose them, and dry them in the Sun againe; and then peeling of the rind Hackle it upon Iron Combs, and beat the Stalks till it be so plyant that it may be Dressed, Finer or Coarser as occasion requires: The best Flax is brought from *Moscovia* and *Livonia*.

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Of Hemp, there are two sorts, Male and Female ; the former bears no Flower, but a Seed of divers colours : The latter bears a flour ; and this kind of weed, or plant, will grow upon any ground, if it be not composed of Chalk, burning Sand, or hard Gravel. The stalk has many knots, out of which proceeds Branches, with narrow, sharp, and Indented, or Jaged. But if it be Sowed in good ground, it prospereth the better. The time of Sowing it, is equal with that of Flax, only with this differance, that the one is more advantageously cast into the ground when the wind sits South-west: Though in *Egypt*, being a hot Country, they Sow it in the end of *February*, or the begining of *March*, with good success : But be ware you Sow it not in Rainy weather : When you Plough for it, it must be deep, by reason the Roots decends a considerable way into the ground, the better to support the top ; which often aspireth to Twenty or Thirty Foot. This also requires water at the Roots, by reason of it's hot quallity ; and the thicker 'tis Sown, the better it prospers : In all other respects, use it as the Flax ; and of these are made Sailes, Ropes, Cords, Yearne, &c. To be Framd, Fashioned,

ioned, and wrought by skilfull Artises into divers things, greatly usefull to all Nations.

And without which, especially, none can manage their Marine affaires; but forbearing to Inlarge further on them at this time; I shall proceed to give Instruction for the Improvement of Saffron, and Licorish, two commoditys, greatly in esteem; and from whence, if well Managed, great profit will arise.

Saffron and Licorish, how to order, and Improve to the best Advantage.

SAFFRON, though but lately Planted in *England*, unless for curiosities sake, is found to prosper and come to perfection, better than in any other Country, especially in some parts, as the Countys of *Essex*, *Suffolk*, and *Cambridg*; so that thereby their ground and Labour returns to an extraordinary advantage: To procure which, having chosen good Land composed of fine mellow Mold, which in most parts of *England*, you may Rent at Twenty shillings:

shilling an Acar ; when having well
 Ploughed , and Harrowed it over ;
 lay the Lands as for Corne, viz. with
 Ridges, then with an Iron Instrument, like
 a Hoe, but the bitt about Twelve or four-
 teen Inches broad, draw a Furrow long-
 ways ; and leaving your Roots or sets
 (for from the Seed little or no advantage
 arrises, unless transplanted ;) set them two
 or three Inches one from the other, the
 Furrow being not above three Inches
 deep ; which being done, draw another
 Furrow, so that by it's nearness, the
 Mold that is drawn out of that, may co-
 ver the former Roots, and so one after
 another, till all are covered but the last,
 over which you must draw such Mold as
 comes next to hand. The time of Setting is
 the begining of *July*, Observing that your
 Ranges or Furrows, are not above Three
 or Four Inches distance, that so a fine
 Hoe may pass between, to take away the
 weeds : If the weather be dry, you must,
 as you see occasion, water the top Ranges.
 In Winter it will continue green like
 Sives, though in Summer, soon after the
 Flower decays, it appears to dye ; though,
 if once well Rooted in the ground, it will
 never out. In *September*, the Flowers
 being

being blew, and very lovely to behold, it comes up without any green Leaves; in the middle grows out two, three or four blades of Saffron, standing upright; the Flower at the same time, spreadeth abroad; which chives or Bladders, being the Saffron. When you perceive them to put forth, you must take between your Finger & Thumb, & draw them forth; & so you must observe to do every morning, for else it will returne into the Flower, or the Earth, and by that means you will be deprived of so great a benefit till the Insuing morning. By this means you may furnish your self with Saffron a Month together; the Flowers continually Increasing: Your Pickers must be in number according to the quantity of your Crop, that so you may prevent its striking in againe, no time but the morning being Proper for the gathering thereof: It will grow to bare two successive Crops, but no more; for then it must be taken up; the youngest Roots Transplanted, and the oldest layed aside. The Roots are frequently sold by the Bushel; and two Bushels of good Roots, will set an Acor of ground after the manner aforesaid. The time of taking up, is the begining of July, or somewhat sooner if you see occasion.

Having

Having taken off the Saffron, you must set it to dry after this manner, *viz.* Make a Kill of Clay, not half so large as a Bee-Hive, though in forme like it, the which, with clay and sticks formed for that purpose, must be Tended, with a little Char-
 cele fire under it; and to know when it is well dryed, is to reduce three pound of wett Saffron, to one pound dry; and by these measures, an Acar of Flowers may produce fourteen or fifteen pound of Saffron; or if but half the quantity, it will greatly recompence the Charge and Labour.

Licorish is a profitable Plant, and of late days greatly in request; to Improve which, having chosen good Land, mellow and well Trenched with Dung, so that the Plants with ease may take deep Root, being as dry as possible may be, before you set it; dig well the Land three spades deep, and a shoveling or two, and Intrench with Dung; allowing for Ground-rent, and Charges the first Year, four or five pound an Acar, when, as the two Insueing years, for three years the Plants must grow before they are fit to be drawn, it will cost you little or nothing,
 your

your slips you must buy, if you have them not of your own, the price of them is usually twelve-pence the hundred, being taken from the best and largest Licorish: The best being the crown sets, or heads gotten from the very top of the Root, shived or sliced down a little way; the which, when you have gotten, and cast your ground into Beeds of four foot over, all along your Plantation, from one end to the other; drawing a line, with knots, in it, each a Foot distance, along the said Beeds; set your Plants equally distant thereby; by making deep holes with a Setting stick, or Setting Iron about the thickness of a Fork stale, and crumbling some soft Mold, and a little Dung, to the bottom of them; and cover up the plants; but be sure that the Plant come not at the water, sprinkling or soaking in the ground, the which if it does, it will suddainly chill and stun't in it's growth; nor must you suffer your Slips to be out of the ground, longer then you can take them up and Set them; though, if the weather be excessive dry, you may water them a little, three or four days after you have Infixed them in the ground. This done, you may the first year set Oynions, and any thing that

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Roots not deep; and for the second and third year, a little Hoeing, and clearing from Weeds will suffice, even till the Plants are ready to be taken up. The time of Setting this Commodity is in *February* and *March*; and the time of taking it up *November* or *December*, for then there runs from every master Root a Runner, which passeth along the over part of the ground, having little Sprouts, Roots, or Scines, which yield excellent Sets, being cut at four or five Inches in length; also, if it be any thing a moist time, you may take slips from the Leafe or Branch, and Set them, some of which will grow: But the best is to set them between your other Plants, to thicken them, least any of them should Faile.

When you find your Plants well grown, take them up and sell them as soone as may be, least they by drying loose much of their waight: And by following these directions; of a good Acar of Licorish you may make Eighty or Eighty-one Pound, of an indifferent Forty or Fifty Pound. And thus much for these parts of Improvement; and as to what remaines I shall Joyue Profit and Pleasure Hand in Hand;

and

and in the first place Treat of the most Admirable Creatures called Bees.

Of Ordering and Improving Stocks of Bees. &c.

TH E Bee, though a small Creature, and by many numbered amongst Insects, is Extreemly Advantageous to his nurisher, in returning abundance for the little he receives, and not so only, but asoards Demonstrative Rules to Men, both of Pollicy and Frugality: Insomuch that the Ancients Nurished and Preserved them, as much for Plesure as Profit; calling them the Birds of the Muses, and *Virgill* with wonderfull Eloquence describs their Order, Government, manner of Warring, Bulding, Obedience to their King, &c. But not to Inlarg thereon, I shall proceed to the Improving Part, viz. To Store your selfe, there are three manner of wayes, Either by Buying them, Taking wild Swarmes, or making them by Art. If you buy your Bees, Observe they be Lively, Little, Smooth and Shining; Rejecting the Rough and unfemly Ones; and

and above all let the King or Master Bee,
 be Long, Shining, and Chearfull, not too
 great or too small, for upon his Success
 depends the wellfair of the whole Swarm.
 Observe, likewise, that the Swarme be
 whole and great, which you may know by
 looking into the Hive, or observing great
 numbers clustering about the dore ; If
 these two Observations faile, finding them
 all at Rest, Blow in amongst them, and
 by the greatness or smallness of the an-
 swering sound you will perceive them to
 be more or less. If you Transport them
 far, the change of the Aire, many times,
 Incomods them ; to remedie which, you
 must set them in pleasant Gardens, or scat-
 ter sweet smelling Herbs about their Hives ;
 the best way to carry them, is upon a Mans
 shoulder in sheets upon a Pole ; one Hive
 behind, and the other before, in the night
 time when they are at rest, being very cau-
 tious of joggng them, for fear of Mashing
 their Combs ; and the best time to remove
 them, is the Month of *Aprill* ; being sure
 you carry them not, from a pleasant
 place to one that is otherwise, for if you
 do, they will soon leave you : When you
 have brought them to the place you In-
 tend, If it be day time, you must nither
 open

open nor place them till night, to the end, that after the quiet rest of the night, they may goe cherfully to work the next morning; and be sure to observe them narrowly, for two or three days after, whether they goe all out or not, for if they doe, 'Tis a shrewd signe they Intend to leave you.

To Store your Self with wild Bees, Take these following Directions: That is such as Breed in Clefts of Oaks, or other Trees, in Fields, Forrests, or Wildernesses, or in Rocks, or Ruins of Castles or Churches. To find them out, set a little Box, with a small hole in it, Neer the water side, whether you perceiue the Bees to Resort, and when many have entered, for the Sugar, or hony, put their in, stop up the hole and haueing lett one out, follow him as far as you can see him, then lett out an other, following him, Likewise, and so a Third, till by their flying directly (for so they will) to the place of their abode, you find them out: And to know whether they are far or nigh, set Sugared water, and when they come to sip, sprinkle some Red, green, or other coller upon them, and by their often or seldom coming, you may gues the distance

or nearness of their Nests; as also by the suddaine resort of great Numbers, soon as one or two have found out the sweets, for they suddainly give notice to their Fellows. Having found them, if in the body of a Tree, and you can not come at them, smoake them out, and settle them by the ringing of any Brasse Vessel; and having sweetned your Hive with Herbs, shake them into it, or rather cut down the Bough and cover it with a Sheet, setting your Hive, afterward, near it, that the Bees, of their own accord, may goe into it; or if you cannot smoak them out, saw the Tree, or use such other means as may oblige them to forsake their dwelling; taking the whole day before you to perfect this work.

In the placing of your Bees, Observe it also, that in the Winter and Spring, the place of the Hives may stand to the Rising-Sun; and so order it, that neither in Winter nor Summer, they be too hott or too cold: Observing above all things, that the Aire be wholesome, as also the Herbs, plants, and Flowrs growing about them. The Herbs, &c. That Bees most delight in, are these, Thime, Cassia, Rosemary, Savory, Smallage, Violets, Sage, Lavender,

der, Mirh, wild Marjorum, wild Thime
 Balm, Sweet-Marjorum, Saffron, Bean
 Flowrs, Musterd-Seed, Melliot, Poppies
 Roses, and the like. And those they
 hate, are for the most part Yew-Trees
 Wormwood, wild Cucumbers, Elmes
 Cornel, Spurg, Lawrell and all bitter
 Herbs and Flowrs. They thrive better
 in the Vallies then on Hills; and love to
 be neare clear water Springs. The best
 Hony, is extracted from Thime, the se-
 cond, from wild Thime, and the third
 from Rosemary: As for their Hives, you
 may place them in three ranks, standing
 a yard one above the other, suffering them
 to be quiet and undisturbed; keeping all
 hurtfull Creatures from them; as the
 Toad, Redbreast, Wood-Peckers, Moth
 Hornet, Lyzard, Swallow, Sparrow
 Spider, Butter-fly, Serpent, and Stork
 all which are utter enemies to the Bees.
 All Winter they rest and live upon part
 of what they got in the Summer; or, if
 you have taken the Hony almost bare, you
 must Feed them, by putting in sticks, very
 gingerly, diped in Hony, or Sugar and
 water boiled; as also Figgs, Reason
 Currants, or the like: About the Sun
 entering the signe *Aries*, they come

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broad and Labour dilligently, frameing
 their Combs ; the which when they have
 one, they begin to Breed, and afterwards
 fill them with Hony : Their wax being
 extracted from Gumy-Trees , and their
 Hony from Flowrs. The Hony Harveists,
 many terme them, are in some Countrys
 three times a year, viz. The latter end
 of *May*, the end of *July*, and begining of
September : Though to take the Combs
 at twice a year, viz. *May* and *Agust* is
 best. If the Hive, by reason of a young
 brood, be over charged, which you may
 perceive by the Bees clustering about the
 mouth of it, and the great noise within ;
 having new Hives in readyness, watch the
 coming forth of the young Fry for sever-
 al days ; from eight till twelve in the
 morning ; least, taking wing, they seek a
 new Habitation ; or if they delay to come
 forth, you may drive out the whole Stock,
 with Galbanum, at what time, having two
 Hives, they will settle in two companys, and
 you may Hive them : Or if a Stock be
 decayed, you may put two Hives together,
 killing the King or Master Bee of the
 one Hive : If at any time two Hives
 warme together and Fight, cast dust upon
 the Hives, or sprinkel them with the Juice

of pleasant Herbs, or Hony and water boi-
 led ; and the Fray will be parted. If the
 Master Bee of any Hive, be too apt to
 lead the Swarme a broad, and by that
 means Indanger loosing them, to prevent
 his rousing, clip his wings, and then, not
 dareing to trust them, he will stay at
 home. The signs to know when your Combs
 are full of Hony, are when the Bees drive
 out the drones ; when there is an extra-
 ordinary noise and rejoyceing within, and
 when they play about the mouth of the
 Hive ; neglecting to performe their task :
 for in no wise take the Hony before the
 Comb's are full, least displeasing the Bees,
 they leave you ; many are of opinion,
 that the mouth of the Hive being rubbed
 with Calves-Dung, or Onyon-blades and
 Marjorum, the Bees will never leave it.
 And thus much shall suffice for the order-
 ing and Improving of Bees, from whose
 Labour rises great Profit to most King-
 doms.

C H A P. II.

*Of the Princely Recreation of
Hawking ; and Managing
Hawks for Flight, &c.*

IN this harmeless Recreation, the greatest men in all Ages have taken delight, and esteem it the top of Earthly Pleasure: As for Hawks they are divided into two kinds, *viz.* The Long-winged and the Short-winged Hawk, the former of which are comprized under these names, *viz.* The Faulcon-Gentle, the Ger-falcon, the Saire, the Lanner, the Barbary-Falcon, the Hobbie, and the Merlin: The latter have these Names, *viz.* The Goss-Hawke, the Terrill of the Goss-Hawke, the Sparrow-Hawke; and the Musket,

The Faulcon-Gentle, being the best of all, may be Trained either to the Field or River; being equally desirous to fly at the Partridg, Pheasant, and Mallard. The Ger-Falcon, flies at the Herron, the Saire, at the Crane or Bittorn: The Lanner, at

the Partridg, Pheasant or Choffe. The Barbary-Faulcon, at the Partridg only. The Merlin, and Hobby, at the Partridg. Lark, or any small Bird. The Gosh-Hawke or Terrel, &c. Flys at the Partridg Pheasant, or Hare. The Sparrow-Hawke at the Partridg and Black-bird : And the Musket, at the Bush only.

As to the ordering and Managing the Hawks for Flight, observe the following directions : The Faulconer having taken a Hawke from the Cage, must Bathe him in warme Water and Pepper, thereby to free him from Knits, Lice and such like Vermine, Incident to Hawks, after which feed him well, that he may overcome any Disease, If it befall him, at what time after every Flight, whether it be at the Pray, the Traine, or Lure, you must give your Hawke Casting, if a long winged Hawke, let it be Flannel, if a short winged Hawke, Plumage : keeping the place under his Perch cleane, to find out the casting the easier : after which weather him abroad at evening, unles the evening of such days as you Bathe him ; observing that you never Feed him upon two several meats at one time, nor suffering him at any time to feed on Salt, or the Fat of Meat : when

he makes a Flight at the Field, upon the first springing of the Partridg cast him off, haveing a quick Eye for the Mark, and a ready Iudgment to prevent the stealing away of the Pray

When your Hawke makes a prey at the River, you must cast him off before he comes near the Fowle, nor must the Fowle be shewed before the Hawke be at his full pitch, then crossing the Fowle, after shee has been twice or thrice Enewed : after the Hawke has killed her, give him the Head, Neck, Heart, Gizzerd, and a Leg.

To Man your Hawke well, watch him, and by that means Keep him from sleeping ; carry him, frequently upon your Fist, stroak him often, And often delight him with the Wing of a dead Fowle, Gaze on him, smile in his Face, and cherish him ; by which meanes he will become familliar and Loving ; and after the same manner you must acquaint him with the Horses and Dogs, that he may become Tractable and Bold.

Haveing Maned him, the next thing Requisite, is to bring him to the Lure ; which you must do gradulary, as first to lump to the Fist, then to the Lure, after-

ward to know the Voice, and obey it upon every Call ; Perfecting him therein to that degree, that upon the sound of the one, or sight of the other, he may readily performe your desire ; The which if he doe the better to Incourage him, you must give him some part of a Fowle as a reward ; but if he be sullen and obey not, let him fast, and by that means his stubbornness will abate. As for the short-winged Hawks, you must call them only to the fist, it not mattering whether they are brought to the Lure or not ; nor need they the loudness, nor varietie of Voice, appertaining to the Long-winged Hawkes ; but bring them to the fist with Cheriping or Whistling. The time of Lureing is Morning and Evening ; when, the more to delight him with it, hang bloody and warme Meat about it ; at which being perfect, carry him a broad in a faire day, set him by a Spring clear and gentle, suffering him to bathe himself, but observe the weather be still and warme, it being no deeper then to take him up to the middle Thigh, taking off his Hood, and padding therein, to make him sprinkle the freer ; or the same you may suffer him to doe in a little Tub, the bottom being covered with Sand and Gravell.

Ha-

Having thus far proceeded, Enseame your Hawke, that is, clense him from Grease or Foulness, by giving him a bit or two of hot meat in the Morning, and none at Night; Feeding him upon the flesh of Rooks, washed in two waters, and every four days a Hens neck clean washed and cut till the Pinions of his wings feele soft; give him a Casting as is before mentioned, and now and then a live traine Pidgeon, suffering him to be upon the wing often, and long, that so the Grease may dissolve; the which when it has done, take three pellits of the Root of Sellen-dine, steep them in Sirip of Roses, and suffer him to swallow them; and by that means the Foulness will be brought away; and he rendered Capable for Flight.

When your Hawks is Maned, Lured, and Enseamed, bring him to the Flight, which if it be at a Rheasant or Partridg, in wooddy or close Ground; then when you Lure him, cast your Lure into some low Tree or Bush, whereby you may bring him to the stand; the which having done, draw out your Lure, and give him notice thereof, making him to cease thereon; feeding him every day on the ground

under Bushes, perfecting him thereby to all advantages ; when you fly him first at Game, let it be at a young one, that he may the easier subdue it, and by that means take delight therein : But, if you fly a long winged Hawke in the Champaine, by all means keep him from the stand, maintaining him upon the wing, till the Game is sprung under him, when stopping with advantage, he may the easier take it ; yet for the more sure killing, to Incourage young Hawks, first spring the Partridg, and marke them, when being come to the mark, cast off your Hawke, and when he is gotten to the highth of his Gate, lay in your Spanels, and retriue the Partridg underneath him ; and after this manner you may Fly all manner of long-winged Hawks.

As for the short-winged Haws, fly them from the Fist only ; and to make them Valient, hide a Partridg, or such other Foule, as they most eagarly (by nature) pursue, under a Hat ; when having well Managed him let the traine goe, and the Hawke after it, whilst the Spanels are Ranging.

To oblige your Haws to fly at Foule, properly called the flight at the River,

first

first, whistle off an approved Hawke, that is a sure killer, suffering him to Enew the Foule so long, till he brings her to the plunge, then take him down and reward him, set him by to be ready upon occasion; at what time whistle off your yongg Hawke, and when he is at the hight of his gate, and that you have shewed him water often, to make him more inward, then with a Gibbit call him in, when at any time he looketh out, and so order him till you have brought him over the Foule; then make in with your Company on either side the River, and so lay forth the Foule, the which, if your Hawke stop, Strik, and Truss, you shall presently make into her, and help her, crossing or breaking the wings of the said Foule, suffering the Hawke to take his pleasure thereon; but if he kill her not, at the first stooping, suffer him to recover his Gate againe, laying forth the Foule as before, not leaving so to doe till it is Landed; and the Hawke has killed it, for which reward him with the parts before mentioned: But if it so happen that the Foule escape, then must you sling him an other Foule, or you will baulk him and render him faint-hearted, or careles for the future.

If

If your long-winged Hawks, in their flight at the River, or in a Champaine, be apt to take stands, you must have divers Traines to cast out, in order to call them down: If they be froward reward them not, unless it be with cold Meat and Feathers, the one to reclame them, and the other to scowre them.

If your Hawke be wild and outward, not regarding Whooping, nor Gibbiting; you must follow him, and as soon as he looks inward call him down with the Lure, and by often so doing he will be well acquainted with your Voice, and obedient to your will. If you have a Hawke that is a high flyer, and would continue him so, you must make but one flight in a day, for if you weary him over much, it will make him out of love with high flying.

If your Hawke be a high flyer, yet sloathfull in aquiring his Gate, and by often Scooping looseth his way, which frequently happens by his being kept too sharp, or flown out of season, to prevent it, you must reward him with a dead Quarry; hood him up, and call him about an houre after to the Lure; and in often so doing, the fault will be Remedied; As

for

for your short-winged Hawks, some of them, after they have a while pursued the Game, will turne taile and leave it, the which when you perceive, having a live Traine Partridg, turne it out, and suffer the Hawke to cease it; and if after twice or thrice so doing, he follow not the Game effectually, make him away; for he is not worth the keeping.

If a Hawke that has never been acquainted with Prey, upon being urged to a Flight, take a Tree and sit looking after the Game, you must feed him with quick Birds, and carrying him into the Field cast a live Traine Partridg before him, after he has been a while unhooded, and suffering him to seize thereon, let him take his Fill, and in so doeing Five or Six times, you will quickly find him Vallient. If your Hawke be too fond of you, that he leaves his Flight to return to you uncalled, you must not be too familiar with him; suffering him to feed him selfe, and when he so returnes, give him no reward, and he will soone be Reclaimed.

In Mewing of long-winged Hawkes, there are these distinctions, *viz.* at the Stone or Stock, or at Large, the forme is in a low place or ground Mew; and the latter,

latter, in an upper Rome, where the windowes stand East and West, in each of which you must have a Table to tye the meat on, and a tub of water; as also, Stones, Sand, Gravel, and green Sods, fastening your Hawke with a trunel of Iron, so that, at no time, his leases may be intangled: Perches likewise must be made one above the other, especially if you mew at large; And his Meat must be sheeps Hearts, Dogs Flesh, quick Birds, &c. The best time to Mew, is about the middle of *April*.

If you design to Mew a short-winged Hawke, as the Goss-Hawke, or such like, you shall in *March*, when you have scowred him and made him cleane from Lice, cut his Leases, and cast him, at your Discretion, into the high or low Mew, lining his Perches with Canvas or Lifts, for the preservation of his feet; and in his meat, &c. Order him as the Former.

The best time to draw your Hawks for the Field, is the latter end of *June*, from what time order them for flight, as aforesaid, till *August*; When you may pursue your sport without Injuring your Neighbour: But if you intend to fly at the River, draw in *August*, and prepare against

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September: And thus much shall suffice as to the Princely Recreation of Hawking, so much in request amongst the Nobility and Gentry of all Nations; and from hence I shall proceed to an other Recreation no less Delightfull, viz. Hunting with Begles, and Coursing with Gray-hounds.

CHAP 12.

Of Hunting with Begles, and Coursing with Gray-Hounds, &c.

TH E praises due to this Recreation having been so often set forth, I think it all together needless to repeat them; but waveing that part to proceed to the Material, matter; and in the first place, give directions for chusing good Hounds, for Hunting the Stag, Buck, Roe, Badger, Fox, Hare, &c.

The colours of Hounds are divers, but the white with Black-spots are the fairest,

est, and of the truest Scent ; and for the Shape and proportion, the Hound must be well Set, Long and leane Leged, his Ears hanging, his Sholders broad, his Mouth deep, his Throat wide and open, his Back strong, and his Taile even and well fixed, his Head big, and his Flanks thinn and deep, his Cry big, though, in the Composing your Kenell, some whiners and treble crys will not do amiss, to make the opening of the Pack the more Muscally ; some of them great, and others less ; for the lesser sort of Hounds are the surest Scenters, and the cunnigest in finding out the Game ; though not so swift and able to hold out as the larger, and stronger sort. As for the Kenell, it must be well made, in a dry warme place, free from Vermine, being a pretty distance from the Dwelling-House ; neare some River, Pond, or other fresh water ; and so placed that the Morning Sun may enter, and in the Winter time, you must have a large Chimney neare, in which you must keep a Fire, and suffer your Hounds, after their returne from Hunting, to stretch and cleanse them selves by it, to prevent the Diseases Incident to them, upon suddaine coaling, as the Mangie, Itch, Fear,

vour,

your, &c. And be sure that they have fresh Staw, and are daily clensed, having sufficient roome to ly in, and play up and down, keeping them under with a strict hand ; as for their feed it must be given in Season, though not too much at a time, and that must be either Carrion, Garbidg, or Maugie, the latter of which must be ever given hott ; when having brought them into good case and order, lead them abroad, having in your Pack two Hounds at least, called Hunters on the High-way, such as will Scent upon hard ground, where no pricks nor Impression appears ; as also, two old Stench Hounds, that following upon a sure Scent, may stay the over Swiftnes of the young and unexperienced ones, and keep them right, which will be a great help and ease to the Hunts-Man.

If you design to Hunt the Stag, the most Princly of all Game, for whose sake, as most believe, Hunting was Invented. To know whether he is old or young, mark the print of his Feet in soft ground, and if you perceive he hath a large Foot, a thick Heele, open Cleft, long space, and deep Print, be assured he is old ; if you find the contrary, Conjecture him young.

Now

Now the Principalest quality of a Hunts-Man, is to know at all times where to find him : Therefore let him search in *November* amongst the Furs, Whines, or thick Shrubs : In *December* in thick woods : In *January* in Corne-fields : In *February* and *March*, amongst the young and thick Bushes : In *Aprill* and *May* in Coppis, or neare Springs : In *June* and *July* in out Woods, and Purlews on the verges of Corne-fields : And in *September* and *October*, after the first showrs of Raine, he goes to Rutt ; when yon aproach, in search of him, goe against the Wind, least at a distance he scent you, and fly. The best time to find him is about Sun-rise, at what time, having watched him to his Lare, you may assure your self he will not stir thence, unless Compeled thereto, till Evening ; before which time you may have all things in a readyness.

As for the manner of Hunting the Stag, you must, upon your aproaching his Lare, send out your finders, and after they have hunted about a ring or two, cast in the rest of your Hounds ; when being at full Cry upon the maine Chase, you must Cheer them with Horne and Voice ; and geting a sight of your Game, take special notice

notice of him, that so you may know him, and if you perceive your Dogs follow the wrong Game, rate them off, and bring them back to the default, making them cast about till they have undertaken the first Game ; at what time Cheer them the best you can, and so continue the Chase, till you have either set up or slaine the Stag, or Deer, ever and anon having a watchfull Eye, least you change, for it is the nature of the Stag, when he is once inboist or weary, to seek out an other of his kind, and beating him up, ly down in his place,

To know when the Stag is weary, is easily done by his Slavering, froathing at the Mouth, creeping into holes, the shining and blackness of his Haire, and much Sweat, and his often lying down: For his last Refuge, he will betake him to Ponds, or Rivers, out of which you must force him, by strength or pollicy ; and thus much shall suffice for Stag Hunting ; as for the Hunting the Buck, there is no certaine Rule, but every Hunts-Man or Park-keeper, takes his measures according to the advantage, or disadvantage of the place wherein they are kept ; and seeing the red Deer is ever more difficult to be Hunted then the Follow, he that can Hunt
the

the Stag well, cannot miss to Hunt the Buck: I shall not insist thereon.

If you design to Hunt the Hare, have regard to the place of Hunting, observing whether it be in woody or champaine ground, if in the former, you must not cast off your Dogs in the thickest of the covert; but rather beat the Bushey close, or shrubie ground adjacent, for though you may sooner, perhaps, find a Hare in the wood, yet you will hardly bring her forth to shew you any pastime; when if you find one in the Shrubs she will immediately take to the plaine ground, because, naturally the Haire refuses the Couert, till she is tired; and a Haire once heated, is not so soone lost upon a fresh change, as when the scents are of equal coolness.

If you Hunt in the champain, you must beat the likeliest haunts; as Goss, Brakes, Brambles, Broome, or if the ground afford no such shelter, then in the beginning of Hunting time, repare to the stubble, about Christmas to the fallows, and in *March* to the Green-Corn, for those are the most usual haunts of the best Hars, and in all these places you must have regard to the Forme, or Seat of the Haire, to know wheither it is new or old; as if

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the Seat be plaine and smooth, the padd
before it flat and worn, and the pricks
so new and easy to be seen, that the Earth
appears black, and as it were just broken ;
then is the Forme new, and the Hare
not far from thence ; but if contrary, then
is it old ; and if the Hounds open upon it,
Rate them off; otherwise you will loose
your Labour.

The Hare as well as other Creatures,
used to be Chased, has divers flights and
shifts to avoid her pursuers ; which must
be observed, as her windings, and dou-
blings ; therefore you must at every de-
fault give your Hounds scope, and lea-
sure sufficient, in casting about your rings,
for the windings of them, then you must
observe her Leaps and Skips before she
squats, and beat the place most likely to
give her harbour ; for when she is reduced
to those hard shifts, she is at her last cast,
and cannot long hold out, but must be-
come their Prey : And thus much for
Haire-hunting.

As for the Fox and Badger, so fre-
quently Hunted ; their abroad is in the
ground, out of which, when you have got
them, stop up the hole, and give the
Hounds the scent ; suffering them to fol-
low

low through Woods, or over Champaine ground, till they have run down their Game, the which they cannot easily loose, by reason of the strong scent, which, by Hunts-men, are caled stinking scents: And thus much shall suffice for ordering, and Hunting with Begles; from which I shall proceed to Treat of ordering, and Courseing with Grey-Hounds.

If you would have a perfect Grey-Hound, you must choose one at a year and a half old, or thereabouts; observing that his Head be fine and long, being leane withall, and that his Nose be sharp, and Rush-grown from the eys downward, his eys full and cleare with long eye-lids, a sharp Eare, short and close falling, a long Neck, a little bending, with a looshanging wezand, and a broad Brest, straite fore Legs, a square and flat Back, strong though small Ribs, short and strong Fillits, a broad space between the Hips, a longe Taile, and a round Foot well fenced with Claws. And having so chosen him, you must Manage him upon the Champaine, not runing him at an old Hare, till he is well adicted to the sport, and seeing much consists in dyeting a Grey-hound; I think it no ways necessary to omit; laying it
down

down for the Instruction of the Ignorant; as to Food convenient for your Grey-hounds, it is two fold, *viz.* General and particular, the former is to uphold him in good Case, and the latter to raise him when he is Poor, to run for a wager, or Sick: The best Food for upholding a dog, is chipings of Bread boiled in broth, tender Bones, or Grisels of Veale, Lamb, Pig, Chickens, the Broth of any Meat, and now and then Sheeps-Trotters, Neats-feet, coarse Beif, or boiled Liver, Milk Chees-pareings, scalded Bran and the like; with some of which you must feed him thrice a day, or twice at the least, giving him clean water; and suffer him to lye upon a coarse Carpit, Blankit, or Sweet-Hay.

As for particular Diet, take Sheeps-heads woll and all, cut them in peices, boile them, and after scuming the water, put a considerable quantity of Oate-meale thereinto, as also, Sweet herbs, when as the flesh being boild tender, give it him warme, Morning and Evening, and it will soone raise him; If he be sick you must boile Fenegreek-seed with it, as also, give him a Spoonfull of Methridate, in a glass of Whitewine. If you diet him
for

for a match, make him a diet of Bread after this manner; take a peck of fine Oate-meale, and two pecks of Wheat, grind them together, and having dressed them well, put to them a pound of Ani-seeds and Licorish powder, the whites of a dozen of Eggs, a quart of Ale yest, and as much Milk as will make them into Dough, and making it up into little Loves, bake it indifferent hard, and give him thereof, softened in Pottage, Morning and Euening, and it will wonderfully Increase his strength and Lengthen his wind.

The exercising the Gray-hound, likewise consists in two parts, *viz.* In coursing and airing, as to the first of these; if you would keep him in good plight and secure his wind, you must course him twice a day at the least, suffering each course to be a mile, or a mile and a halfe, ordering it so, that he may some times kill, least otherwise his labour become Irkesome to him; the which if he cannot doe by maine force in runing, you must give him advantage; and when he has killed, reward him with the liuer, lights and bowels. of the Hare, but suffer him by no means to break her when he takes her, but so soone as got

come

come in, take her up and clens his mouth
and teeth from the wool ; but if the dog
be strong and a sure killer, let him put
forth his utmost strength ; when he has
killed, and is rewarded, take him up in
your Leash and lead him home, and wash
his Feet with Butter and Beer, putting
him into his Kenel, when after he has
been there an hour, feed him as your dis-
cretion directs, but observing that you
give him nothing but a Toast and Butter,
that day you intend to Course, before he
has performed it, or for want of Butter
you may dip the Toast in Sweet-oyl and
give it him.

As for the airing or walking your Gray-
hounds it must be done in the morning,
before Sunrise, and in the evening, be-
fore it set, in this manner, viz. As soon as
you have opened your kenel, and rubbed
your dog over with a cleane Hair-cloath,
let him play a little and then lead him
forth into the feilds, where no small
cattle are and letting him loose suffer him
to play about at his pleasure, as also, to
empty himselfe ; when having suffered
him so to doe, for the space of an hour,
lead him home againe, and put him into
his kenel, suffering him if the weather be
H cold,

cold, to come some times to the fire : And thus much for Coursing.

CH A P. 13.

The Art of Angling Improved &c.

OF all Recreations, Angling is held the most contemplative and serious; followed with the least charge and labour ; though, as the rest, it requires much curious Industry and Experience. Therefore I thought fit to lay down such Unerring Rules, as will render it profitable and pleasant to such as undertake it and perfect the unexpert therein : And first I will furnish my Angler with instructions relating to Tackle, as for your top and Stocks, the best are of Hazel, which he must cut in *December*, and breath in gentle fire , though, for Angling at the ground, many prefer the Reed or Cane the stocks you may bore hollow quite through, or make a hole at one end of for the top to enter, fastning a loop of Silk, or Hors-haire at the end thereof

with

And with Shoemakers-thread to tye the Line,
 which Line must be either of Silk or
 Haire; though the latter I prefer before
 the former; and in twisting or breadding,
 you must observe an exact evenness, least
 one haire being shorter then the rest, the
 whole stress lye upon it, and it breaking
 render the rest to weak; to take the Fish,
 the pale waterish coloured haire is the
 best to deceive them if the stream be
 clear, but if muddy any will doe: If you
 make a Line for the Ground Angle, you
 need not make it so strong as the Line you
 intend for your Rod at the Artesial-fly,
 abating in the latter from top to bottom
 a hare in every link, that the Line may
 lessen by degrees from the Rod to the
 Hook, which Hook must be long in the
 shank, and of a compass somewhat inclin-
 ing to roundness, for if the shank be
 strait, the point will hang outward,
 though when set on, it hang right; when
 you set on your Hook, fasten the haire on
 the inside of the shank to preserve it from
 fretting, having smoothed the shank be-
 fore upon a whet-stone: As for your
 Float let it be of the lightest Cork you can
 get, clear from cracks or worme holes;
 and having cut it round thrust a quill

through it, after which, fix your Plumet beneath it, answerable to the float, so that it may not sink ; finding with a Bullet at the end of a string, the depth of the water to be Fished in ; having a little box or bag of Parchment to carry your Lines, &c. and a whet-stone in readyness to sharpen your hook : for your Baties you must have severall little bags and boxes, and to land great Fishes when struck, carry with you a pole with a loop-nett at the end to prevent breaking your line : As for your panier it may be made of cleft osiers, &c.

There are divers sorts of Angling, some cast on the water, others a little depth, and some againe at the ground with a Plumet without a Float ; the latter of which is proper for the Trout, or with lead and a float for all sorts of Fish, or near the surface for Roach, &c. With a Trowle for the Pike, or a Minoway for the Trout. The way of Angling upon or above the water with Canker-wormes, Palmers, Cad-baite, Catterpillers or any Worme breed, of Herbs, or Plants, or with artificial and natural flies : Now the Fish most apt to rise at the flies, are Salmon, Trout, Umber, Grayling, Bleak, Cheuin,

Chevin, Roach and Dace, and some Angle with flies for the Bream and Pick, *viz.* Artificial ones, though without much ground for there so doing, and in this case, if the above said Fish refuse to rise, you may sink your fly some depth, and if you find them decline it, put likewise an Oake-worme, or Cad-baite on the point of the Hook; and it will oblige them, *viz.* The first five to take it, but by the way, Observe that you Fish not with the natural or Artificial fly out of Season, *viz.* Not till suchlike flies flock about the River; for if you doe, the Fish will soon perceive the cheat: Now to know which fly they most covet, at your arrival beat upon the Pulhes and see what sort they are that frequent the River or Pond, and try them all till you are satisfied therein,

When you Angle for the Chevin, Roach or Dace, with the natural fly, you must not upon seeing the Fish advance towards it, nor move it swiftly, but after one or two little removes, let him Glide by it, but if the water be slow or standing, draw the fly slowly, and not directly upon him, but sideways and sloaping, which will make him more eagerly catch at it: These Fish will likewise take the Artificial-fly with a

Cad-bait or Oake-worme on the point of the Hook.

The Arteficial-fly, is no other than a fly made in the likeness of natural flys, with Furs, Bristles, Haire, Silk, Feathers and the like, futable in colour and propotion to the natural fly you intend to Imitate; nor must it be bigger, unless in case of a Salmon, and then you may make it large with four or six wings, if you see it convenient; the way of making them is with soft wax and fine Silk, binding the wings on first, and afterwards shaping the body and head; and to make all sorts of Artificial-flys, you must be provided with all manner of Wools, Furs, Haire, Silk, Feathers, Down and Worsted, to Imitate exactly the colour of the fly, which the Fish you design to Angle for most covets; but above all, let the Belly be the same, wetting your Materials e'r you goe to work, and of these flys, having several, you must try with all till you find which takes best, forbearing if you can, othwise chuse to Fish in a clear water with this fly, keeping it in continual motion, using a larger bodyed one where the water is muddy or dusky, then in clear water; if the water is clear and low, Angle with

a small bodied fly, having slender wings, and when it begins to clear after Raine, and is of a brownish colour, then use a red or Orrange fly : If the day be clear, then a light coloured one, with a little Body and slender Wings : If the weater be dark or Whey-colour, let your Line be futable, and your Line to which your fly is fastned may be twice as long as the Rod, unless the River be incumbred with wood or flags, for that if the River be naturally muddy and flymy at the bottom, the Fish will be hardly Induced to rise at the Artificial-fly.

The best way of Angling with the Cad-baite, is to Fish with it on the top of the water, suffering it to stand upon the shank of the Hook, for if it come into the bent of the Hook, the Fish will not regard it, nor if the blew Gut is taken out : To fasten it in it's place, you must fix Hors-haire beneath it, and by that means the Trout will without much difficulty be taken, and of this, as of the fly you make the Imitation, by forming the head of Black-silk, and the Body of Yellow-wax covered with Shammy, but you must not Fish for the Trout with it in muddy-water, by reason he will not take it but in clear Streames

An other sort of Angling there is, called Angling at the ground, which must be done without a float, having a small Pistoll Bullet for your Plumet, that it may the better role, fixing it about a foot above your Hook, and suffering the top of your Rod to be limber, that the Fish may run away with the Baite without any curb, till you find he has effectually taken it, at what time draw the Line with a moderate Jerck, contrary to the way that the Fish moves, thereby to fasten him, the Line not exceeding the length of your Rod; and by such means you will take the best Trouts: You may Fish likewise with an Earth-worme without plumet or float, drawing it up the Stream, &c. The Trout likewise bits very well at Earth-wormes, or Black-snailes in the Night-time, as does the Chub early in the Morning, keeping it for that purpose, some times low and some times high in the water.

An other way of Angling is with the Trowle, which you may buy ready made, and is mostly used for the Pike, the baite in this case must be a small Roach, Gudgeon, Dace, Loch or Frog put on the wire

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(with which the Line must be well armed) that the head being downwards, it may apper as if it were playing in the water, manageing it some times high and other times low, as near as may be to the place the Pike haunts, at what time he having seised it, give him Line and he will carry it to the place of his aboad, and there pouch it, then range abroad for more, the which, you discerning by the motion of the Line, wind it up till the slackness cease, and then with a nimble Jeark hook him, observing in this, as in all other matters of this kind, to jerk contrary to the motion of the Fish; and to take the Pike be sure of strong Tackle. If you Angle for the Picke at the snap, you must use a double-sprin Hook, for he usually holds the Baite so fast between his teeth, that it is hard to get it out, or strik him, when with a Spring-hook the wire will draw through the Baite, and hook him if your Hook be long: If he lye still, or moue slowly after he has taken the Baite, and cannot find which way his head lys, strike directly upward, and you will hardly miss him. He will gredily seize upon a Minnoway, after the same manner.

As for the Roach he is easily taken
with

with Earth-wormes , Gentles , Wasps , flys and the like ; therefore I shall not Insist on him. As for Eeles, there are two ways of Fishing for them , the first of which, is called Brogling for Eeles. As thus, take a strong Rod and Line, with a little strong Hook, baite it with a well scoured Garden-worme, placing the end of the Hook very easily in the cleft of a stick, that it may upon occasion slip out ; with this stick and hook search for the Eeles holes under Roots of Trees, clefts in the Banks, or neare Flood-gates, and they will presently take the baite, swallowing it greedily.

The second way of takeing them is bobbing for them, which is by fastning a good handfull of wormes to the end of a strong line, and that to as strong a pole ; fixing a Plumet about a foot above the wormes and with it bob in muddy water, and when by the Eeles tugging you find they have fastned on them, hoist them up gently till they come to the top of the water, at what time hasten them to land as fast as you can, least they drop off.

When you Angle at ground for the Salmon, you must have a strong hook baited with three or four Lob-wormes, and

order.

order your matter as for the Trout, or if it be for a young Salmon, to prevent his breaking hold by reason of the tenderness of his mouth, use a double hook, As also doe for all large tender mouthed Fish.

The Umber is a very nimble Fish, and bits freely at flys, Cad-baite, Bark-wormes and Palmers; and must be Fished for with a double hook, by reason of it's tender mouth.

The Barble bits best at great Red-wormes scoured in Moss, also at Chees, several sorts of Past and Gentles: Spawning in *Aprill*, and must be managed very dexterously, or by reason of his strength your Line will be broken.

The Pearch taketh all sorts of Earth-wormes, as Brandlins, Lob-wormes, Cad-baite, Oake-worms, Gentles, Bobs, Wasps, Dore, Menows, Colewort-wormes or any other baite, the fly excepted: Spawning in *February* or *March*: being a Fish of great strength.

The Carp and Tench delights in the largest Red-wormes, the latter especially if they be dipped in Tarr, they also delight in Past made with strong scented Oyls, Wheat boiled soft, Cad-baite, Gentles, Marsh-worme, Flag-wormes, &c.
And.

And are eager biters: The former Spawneth in *May* and the latter in *June*, and must have play when they are struck, or thay will break the Tackle.

The Gudgeon and Bleak taketh the smallest Red-wormes, Cad-baite, Gentles and Wasps: Spawning in *May*, the latter of them likewise takes Arteficial-flies.

The Ruff takes the same bait with the Pearch, only they must be less, he being a much lesser Fish.

The Bream delights in Red-wormes, Past, Flag-wormes, Wasps, Grasshoppers, Green-flies, Butterflies, &c. Spawning the latter end of *June* or beginning of *July*.

The Flounder, Shad, Suant, Thwaite and Mullet bite eagerly at Read-wormes, Wasps and Gentles.

The Minow, Loch and Bullhead bite eagerly at Read-wormes, Cad-baite, Wasps or any wormes bred of Herbs or Plants. Having thus far proceeded, I shall instruct the Angler how to make divers sorts of usefull Baits to lay Rivers, or bait Hooks, thereby to draw the Fish together, as also to take them; first take the tender part of the leg of a young Rabbit, as much Virgins wax and Sheeps-suit, incorporate them in a mortar,

tar, ading as much hony as will make them into a past.

Secondly, take Sheeps kidney-suet an ounce, as much Chees and the quantity of them both in fine flower, Incorporate them and make them into a past with Hony

Thirdly, take foure ounces of Sheeps blood, & a peny white loafe; and make them into a past with hony.

Fourthly, take a like quantity of Cheerys, fine manchet, sheeps-blood, & saffron, incorporate them, & make them into a past; or take the best old cheese, strong Renit, wheat flower, aniseed-water, & if you designe it for a Chub, rustie bacon; mix them well and make them into a past. If you designe a Past for a Chevin, take Chees, Renit, Mutton-Suet and Turmerick, make them into a Past: And with these you may either baite at ground, lay a River or baite at Hook and Float; making your baites bigger or lesser, according to the size of the Fish you baite for.

To this you may add Coculus, India Assafetida, Oyl of Polipodium of the Oake, Ive or Gum of Ivie, most of which as occasion serves, you may mix with the aforesaid Past, strengthening them with raw Silk or Flax, to keep them the bet-

ter

ter on the Hook.

The next thing to be considered, is to be well acquainted with the haunts of the Fish, *viz.* If you Angle for the Salmon, it must be in large swift Rivers that ebb and flow, gravely and craggy. If for the Trout, it must be in purling Brooks, or Rivers that are very swift, strong, or Sandy bottomed. The Carp and Tench are found in still waters, where Weeds or roots of Trees abound. The Eele loves muddy Rivers or Ponds, especially the largest sort. The Pike Breem and Chub chooses Sandy or Clay-rivers, Brooks or Ponds wherein Bushes, Bull-rushes or Flags grow. The Barbile, Roach, Dace and Ruff, are mostly found in Sandy and Gravelly deep Rivers overshadowed with Trees: The Umber is found in Marly, Clayey streames, running swift. The Gudgeon delights in small Sandy and Gravelly Rivers, biting best in the Spring. The Shadd, Thwait, Peel, Mullet, Suant and Flounder love to be neare the Sea or in brakish Rivers, coveting the ebb and flow, where the bottom is Gravel or fine Sand, though sometimes, yet seldom, (all of these I have mentioned) are found in different waters; therefore to be accounted

counted a good Anglar, it will not be a miss at leasure times to try all waters where you suspect Fish are bred. And from hence I shall proceed to informe you which are the best times to Angle in, viz.

First, If you design to Angle in the hottest months, take the weather when 'tis Cloudy, and a small Gale stirs the water.

Secondly, When the floods have carryed away the filth, the suddaine showrs incumbred the waters with, and the Rivers, &c. Retains it's usual bounds, looking of a whitish colour.

Thirdly, When a violent shower has mudded or troubled the River, or a little before the Fish Spawn, at what time they come into Sandy ground to loosen their Bellys.

Fourthly, When after Raines the Rivers keep their bounds, yet rise and run swift, for then thay seek shelter in creeks, and little Rivolets runing into the said River, &c.

Fifthly, Fish for the Carp and Tench early viz. before Sunrise till eight in the Morning, and from foure in the Afternoon, till after Sunset. In *March*, the beginning of *Aprill*, latter end of *September*; and all Winter the Fish bite in the warm'th of the day, when the wind is still: But in the

Summer

Summer Months Morning and Evening is best.

Sixtly, Fish rise best at the fly after a showre has muddied or clouded the water. And for to Fish with flys in generall, *March, Aprill, May* and the begining of *June* are the best. If you Fish for Trouts, you may doe it in a clear Starlight-night; he bits best in muddy water: The usual time of fishing for him is from eight till tenn in the morning; and from three till five in the Afternoone.

Seventhly, If you Fish for the Salmon, the best time is in *May, June, July* and *August*, from three in the Afternoon, till Sunset, in the Morning as before said. The Barble bits best early in the Morning, till ten or eleaven; in *May, June, July* and the begining of *August*. The Pearch and Ruff bite all day in coole cloudy weather.

Eightly, The Carp and Tench bite early and late in the still parts of the River; *June July* and *August*: As also doth the Chevin, whose chief baite is a Snaile or small Lamprey.

Ninthly, The Breem bites from Sunrise, till nine or tenn in the Morning, in muddy water, especially when the wind blows hard, for the most part keepining in the

the middle of the River or Pond in *May*, *June*, *July* and *August*.

Tenthly, The Pike in clear water and a gentle Gale ; in *July*, *August*, *September*, and *October*, bits best about three in the Afternoon, in *Winter* he bits all the day long ; and in *Aprill*, *May* and the beginning of *June*, early in the Morning and late in the Evening.

Eleavently, The Roach and Dace bite all day long at the top of the water, at frys Natural and Artificial, as also at all sorts of Worms if the water be shady. The Gudgeon bites in *Aprill* and till he has Spawned, in *May*, or if the weather be coole, till Wasp time ; and at the end of the yeare all day long neare a gentle streame, observe when you Angle for him, to stir and rake the ground, and he will bite the better. As for the Flounder he bites all day in *Aprill*, *May*, *June* and *July*, especially in swift streames, though he will bite, but not so freely in a still deep ; you may baite the River with Guts, Liver, Flesh, Cad-baite, Gentles, Wasps, &c. to draw the Fish together, and keep them so by casting in Malt. And thus much for the Ingenious Recreation of Angling.

CHAP.

CH A P 14.

The Art of Ringing made Manifest.

AMongst other Recreations, this of Ringing is not the least, being altogether a Mistry composed of Harmony, it's Invention being Methematicall, producing incredible effects, as hereafter will appear. And first of the Changes, which will introduce you to a better understanding of this Art, viz. The number of Changes are thus discoursed, two must first be admitted to be varied two ways; then to find out the Chages in three; The Changes in two must be Multiplied by three and the product will be six, being the compleat Number of changes of three: And the six being Multiplied by four will produce twenty-four, which are the compleat Changes on four, and they Multiplied by five will produce an hundred and twenty, which are the compleat changes on five; and the hundred

dred and twenty being multiplyed by six will produce sevenhundred and twenty, which are the compleat number of Changes on six ; the 720 Multiplyed by seaven, produce 5040, and so as the Changes rise or fall, the numbers are more or less, and may be screwed up so high by this means, that they will want a name, and no man liveing together in the whole Series of their Lives, though they kept continual Ringing, can be Capable of Ringing them out, yet shall not one Change be the same, but still vary to admiration, admitting the Figures 1 and 2 may be crossed as thus 1. 2. Then 2. 1. This granted, although the numbers are never so many, either 3 4 5 6 7 8 or 9 Bells, the same figures, though set down a thousand times, shall still vary, especially upon the three latter.

The Changes being alltogether Misticall, and not easily to be obserued in common Ringing ; it was thought fit, by the curious Introducers of this Art, to cast Peales, that the Musical Notes therin, might both take the fancy, and delight the eare ; every Peale of Bells being Tuned according to the principles of Musick : for in the Peale of six Bells are the six Musical notes,

viz.

viz. La. Sol. Fa. Mi. Re. Ut. Though he must be a Skilfull Artist that can strike them exactly, unless with great deliberation they be struck gradularly: Striking or Leading with the least Note, and so successively up to the greatest, and from the Largest down againe to the Smallest; makeing the fourth Bell Hunt up to the seauenth, and then dodg, unless prevented by the trebl; and so any other of the number of seaven, that in the compleat number of Changes of the first striking, there shall not be the same Rung over twice: And this requires steady hands, and muscalle ears to observe the least defect and to mend it or reuers by dodging or falling in course a the Bells hunt up or returne, by putting in between or taking place in compleat harmony.

This being the ground of the plain Peales, introducing to the Art of Ringing, I shall proceed to a brief Demonstration of cross Peales: Thes Peales are termed cross by reason of their Intricacy or cross method, wherein diuers Notes moveing together cross each other, whilst some move up and others down; and the better to direct the learner the Artists in Ringing, have appointed one Note, especial-
ly,

ly, as the guide of the rest, called the Hunt, having one constant motion and vniforme throughout the Peales, differing from that of the other notes ; keeping a continual motion through the notes, viz. From the leading to the striking behind, and from thence to the lead, which motion up and down, is computed the compleat course, though some Peales upon five Bells, as the old doubles, &c. Consist of single courses, each single Course admitting of tenn changes and twelve Courses are accounted a Peale : Other Peals upon five Bells, as the *London Paradox*, &c. Consists of double courses, twenty Changes going to every double course, and six double course to the Peale, upon six Bells there are single and double courses, viz. Twelve Changes in every single Course, as in *Gradfire Bob*, &c. and twenty-four in every double Course, as in the *Colledg-bob*, &c. The Change wherein the Hunt Leaves leading, being accounted the first Change in every Course, and all the Courses in cross. Peales agree in three respects, first In the motion of the Hunt, second in the motion of the remaining notes, and thirdly in making of the Changes, the which well noted, is

a sure guide to the rest, as in the following example will appear, some few changes in each Peale excepted.

This instance is a Peale of new doubles upon five Bells, these being the three first courses of the Peale, wherein it's observable, that the last change of the first course, which is 13524 is set down againe at

<i>First</i> <i>Course</i>	<i>Second</i> <i>Course</i>	<i>Third</i> <i>Course</i>
12345	13524	15432
21354	31542	51423
23145	35124	54132
32415	53214	45312
23451	35241	54321
32541	53421	45241
23514	35412	54213
32154	53142	45123
31245	51324	41532
13254	15342	14523
13524	15432	14253

the top of the second Course, and also the last Change of the second Course, which is 15432 is placed at the top of the third Course, so that the lowermost changes are the ten changes of each Course, and as to the motion the first properly the Hunt moves directly up behind, where having layne twice, it comes down againe to leade, where it likewise lodgeth twice, as it appears in each of the three Courses, as also throughout the Peale and as the second, third, fourth and fifth Bells move through

through the first course, so the Bells that lye in the second, third, fourth and fifth places in the last Change of every course moves in the manner as through the next following Course, and so moves and changes place. As to the rest which cannot be so well demonstrated in words as practice, for note in every cross peale, the Courses doe all agree first in the motion of the Hunt, secondly in the motion of the rest of the notes, and thirdly in making the Changes; the which well observed, will prove advantagious to the Learner, both in Ringing and Pricking.

To Ring the 24 doubles and singles upon 4 Bells; observe that the Peale consists equally of doubles and single Changes, one Change being double the other single through out the Peale: the first being the the Hunt, and the other 3 extreme Bells; every double change, is likewise made of the two first and two last Bells; and every single one the two middle ones, except when the first leads, and then the Bells behind are called the extremes: All the Bells have direct Hunting-courses up and down, untill the first leads; and then the second lyes still while the two hinder Bells make a dodg, which made all the Bells proceed

proceed againe in their Hunting-courſe ; there being 3 extreame Changes made after this manner, viz. The Firſt, every time the Hunt leads. The ſecond, every time it lyes behind. And thirdly, every time it leades and lyes behind,

To Ring the Peale called the old doubles and ſingles upon 5 Bells, obſerve this order: One change muſt be double the next ſingle; and ſo by turns, whiſt the Treble has the direct Hunting-courſe, as in caſe of plaine Changes, every double change being on the four firſt Bells, the Treble being one of the two that make every ſingle change, unleſs when it leads, and then the ſingle is in the third and fourth place, but when two lye next to the Treble then the ſingle is behind, which is called the extreame, every time the treble leaves leading, the two firſt bells continueing ſlow dodging untill the treble comeing down diſplaceth them, and when the treble moves down out of the fifth place, the bell that comes into it lyes ſtill, till the treble hunts up to it gaine, unleſs when the extreame change is made behind. Every Bell lyes twice together in the third and fourth places, except when the Treble leads and alſo when it hinders them

e ; n in Hunting. In the old Tribles
 de ; Dobles upon six Bells, one Change is
 ry ; Tribble and the other Doble ; and so by
 ry ; turns, unless one Single at the end of
 ry ; every sixth Change : Every Tribble change
 being made on the two first, two middle
 ob- and two last Bells, and every Doble on
 his the four middle Bells, unless when the Hunt
 the leads, and then on the four hindermost :
 the The Treble being in this case the Hunt,
 as having a direct Hunting-course up and
 lo- down as in plaine Changes, as have the
 th- rest, unless when the Treble leades, and
 ke- then each Bell that was Hunting up, un-
 ds, less that in the second-place, makes a dodg
 and with the next Bell below it, and then pro-
 to ceeds forwards againe in it's course up ;
 ich and each Bell, that at the same time was
 the Hunting down, makes a dodg with the
 blls next Bell above it, and so proceedeth in
 ble it's cours downward, which method will
 nen carry on the Peale five courses of the
 fth Hunt, that is sixty Changes ; and thus
 ill, with little alteration you may Ring upon
 less 8 or 9 Bells, which for Brevities sake,
 nd. must here Omit and proceed to Treat
 the of Fire-works, &c.

C A A P. 15.

*A Treatise of Artificial Fire-works
for Recreation, &c.*

THe Fire-works for Recreation I shall divide into three general sorts; the first are those that ascend and mount into the Aire: The second, such as consume on Earth: Third, such as swim and burn in the water; and these again are divided into three particular sorts, viz. For the Aire the Baillon, the Sky-rocket and flying Saucissons for the Earth; the ground Rocket, the firey Launces, and the Saucissons for the water, Globes or Balls, double Rockets and single Rockets, and for these in their order; yet for the better Instruction of the Learner, I shall say something of the Mold for Rockets of the Aire, and first if you make the Calliber or bore of your Mold an Inch of Diametar, then shall the Mold be six Inches long and the Beech must be one Inch & a half, the Broace being three Inches and a half long, & in thickness

a quarter of an Inch in circumferance, the
 Rowler must be three quarters of an Inch
 diametar, and the Rammer a size less, that
 it may easily pass and repass, being made
 hollow the length of the broach for the
 Cartoush Coffin or Case must be loaded,
 the broach being in, if the bore be two
 Inches diamiter, the Rocket must be
 twelve Inches in length, if but halfan Inch
 in the bore, three Inches in length, if
 two Inches and halfe in bore, then nine
 Inches long and so to any diamiter propo-
 tionable, and accordingly must the length
 of the breech vary, and thus much touch-
 ing the Mold, &c.

1. How to make a Skye-Rocket, &c.

The Principall thing to be considered, is
 mixing the composition to a due portion;
 therefore for the composition of middle
 sized Rockets, add no more then two
 ounces of Charcoale to a pound of Pou-
 der, the one and the other being brused
 and sifted through a Lawne-seive, with
 which, by degrees, having filed one Rock-
 et try it, when if it break there is too
 much powder in it, but if it refuse to mount
 after you have added more Charcoale,
 then

then have you added too much and must add Pouder well beaten till you find it mounts freely without breaking, for the force and motion are occasioned by the Pouder and the firey streame or taile by the Charcole-dust, or if you want Charcole, Sea-cole fine beaten has the same effects: observe when you charge the Rocket that every quarter of an ounce you put in, you beat it down with a Mallet or some weighty thing, giving three or four blows on the top of the Rammer, not filling the Case higher then the Mold, but being even with it double down halfe the paper with a bodkin, beating it close, and then with the same instrament peirce two or three holes in it to give fire either to Stars, Saucissons or Serpents as hereafter shall be more plainly demonstrated. And let the rest of the cartoush or Cases be cut even with the Mold: and after this manner must be made Rockets, great and small, only the composition for the lesser must have less Coale then that for the greater.

2. Ground

2. *Ground Rockets and Serpents, how to make, &c.*

The Moulds for ground Rockets seldom vary for the Calliber or bore being halfe an Inch in diamethar, the length must be six Inches and in all other request relating to the Cortoush like the Skye-Rocket, the composition: if it may be rightly termed, must be only Pouder fine beate and ramed in by degrees as into the former, till within an Inch of the brim, at what time, put in a bout a Pistol charge of unbeaton Pouder and choake into what remains unfild with a small cord, tying it fast and cutting off what hangs over, leaving it with a picked end, when being thus finished prime it with a little wett Pouder and lay it a drying. The Serpent being in effect a small Rocket, I think it not a miss to joyne it with the ground Rocket. The way then to make the best sort of them, take as followeth, *viz.* Let the Cases be made upon Rowlers, the Paper nine times round, the Rowlers not exceeding the thickness of a Tobacco-pipe, when having pasted the out sides choak the neck about an Inch, then takeing out the

the Rowler and broach, fill them if for the Aire with the composition of the Aire Rocket, if for the Land with that of the Ground Rocket in the same manner.

3. *How to make Golden Raine and Stars of divers sorts.*

To make Golden Raine now called Golden Haire, take Goose-quills, cut off the fethery ends leaving the Quills open and as long as maybe, fill them with the Composition of the Aire-Rockets, stoping them afterwards with a little wett Pouders; and place them upon the crown of a great Rocket, pasting them on with paper, that they may not fall off till the Rocket bursts and then take fire; at which time, being forty or fivety in number, they will appear to those that are under them like a shower of fire, and to those that are a side of them, like the streamers of a Comet or Golden-Haire.

As for Stars they are made, especially the two best sorts, of dry and wett Pouders: To make the first sort, take a pound of Salt-peter, half a pound of Brimstone, and a quarter of a pound of brused Gun-powder, beat, sift and mingle them well,

then

then in paper or linnen rags wrap up so much as the quantity of a Walnut, fix it to the end of your Sky-Rocket so that when the Rocket is at the highest it may take fire, at what time, being pierced full of holes, it will spread it self in flame, and appear like a Star, insomuch that the Ignorante will take it for a real Star. The other sort are made of a pound of Salt-peter, half a pound of Poudre, and half a pound of Brimstone wetted with oyl of Petrole after they are finely beten, or else with faire water and made up into round pellets; when being thoroughly dried, by roaling in drye Poudre dust, use them as the former, yet will they not give such satisfaction to the beholders, by reason they fall more like a body of fire than Stars; as not (by reason of the wetness) having the freedom of expending themselves in flame.

A sort of Stars there are that give great reports, like Pistols, when they expire; and these are made with Wild-Fire composed of Salt-peter, Poudre and Brimstone, fastened to the head of short cases filled with dry Poudre, and fix five or six of them upon the sterne of a great Rocket, so that they may, upon the Rockets expiring

ing, take fire; the best way to effect which, is to put them into a case so large that it may goe over the Rocket.

4. *The manner of making Saucissons, and preparing Stoupel or Cotton-reeck.*

The Saucissons are two sorts, one for the Earth, called standing Saucissons, and the other for the Aire, called Flying Saucissons: To make the first of these; have a Rowler so big as you intend the hollownes of the Saucisson, rowling as much paper thereon as you think convenient, when choaking it at on end, and bind it over with small Cord, and Glue the Cord, the which done bore one end with a Bodkin, and put in to the hole a Quill filled with fine Dust-Powder to serve for a Port-Fire, suffering the other end of the Quill to pass through a hole in the bord, on which the Saucissons are to be fixed; and by this means, setting them a foot asunder, by touching one Quill, a Train for that purpose being layed, they will fire one after another, giving reports like Muskets: Stouple, is nothing but Cotten-Woole well dressed in Water and Gun-Powder and dryed in the Sun, so that

it

it like Tinder will be apt to take fire on every occasion, and is vſed in paſſing from Rocket to Rocket on the Wheele, runing through the Stars, or to fire the Fire-Lance; and upon divers other occasions.

5. *How to make Fire-Boxes, Firey-Launces. Trees and Fountaines of Fire.*

The Fire-Box is no other than divers Rockets put into a large Cartouſh or Caſe, and given Fire to at the ſide, ſo that it being mounted or ſtanding firme, the Rockets fly out with prodigious fury, ſome times one by one and other times all-together, according as they take fire.

The firey Launce is to be molded in all reſpects as the Ground-rocket, only the cartouſh muſt be Paſtbord glewed as it is rowling, and no broach muſt enter it. The compoſition, if you wou'd have it to bare a long Firey-taile upon the water, muſt be one pound of Salt-peter, halfe a pound of Pouder-duſt, halfe a pound of Brimſtone-duſt and two ounces of Char-cole-duſt; but if you deſire it ſhould burn bright like a Candle, then take one pound of Salt-peter, halfe a poud of Brimſtone duſt and three ounces of Pouder well bruſed,

fed, tying to each launch a rod in the same nature as you must order the Skey-rockets, filling them after the like manner.

To make a Tree or Fountaine of Fire, fix divers little Rockets to a great one, by runing their Rods though the large cartouch of the great Rocket, and if they fire whilst the great Rocket is ascending, they will spring up in streames of Fire like the branches of a Tree, but if they take fire whilst it is falling, they will appear like a Fountain of fire.

6. *To make Girondels or Firey Wheeles.*

The Girondel is a firey Wheele and ordered after this manner, viz. having a Wheele made of wood ty small Rockets round it, fastning them so that the taile of one when it gives fire may fire the head of the other, and that but one may be on fire at a time, and the force of the Rockets will carry the wheele round with incredible swiftness; These Wheeles are mostly made to grace the Angles of great Fire-works.

7. *To make the Ballouns, the Prince of Fire-works.*

The first thing required in order to the expoling this Fire-work to the publick view, is a Mortar which you may make of Pastbord and Cord, Glewing them exceeding well as you rowl them on the Rowler; when if the caliber be foot anda half diamitar, the length must be fix foot, when haveing dryed it well after the Cords are bound over it, you must bore a Touch-hole about a foot from the Breech, the Breech being well choked and Corded or otherwise firmly stoped that the Poudrer cannot force vent that way.

As for making the Balloun, you must take strong paper or Pastboard, rowle it upon a wooden Rowler Glewing it as you Rowle it; after which, choake the Cartoush at the one end, leaving a little hole for the Port-Fire, which Port-Fire must be of durance till the Ballon comes to it's hight, which being done put in as many Serpents as the Cartoush will hold, and amongst them 3 or 4 Saucissons to breake it, makeing them of equall length with the Serpents; your Serpents being very large.

large, fill them as other Serpents, or as Rockets for the Aire; presing the Touch strongly into the Throat, if dry, but if wett it needs not: Observe, likewise, that the throat of the Saucissons be longer than the Serpents throats, that so the Serpents may all take fire before the Cartoush breake. Over the Serpents you may place a considerable number of Stars, after which choake the other end, and prime it with Stouple or Cotten-week, made as before directed, fastening it well to your Port-Fire, and charging your Mortar, put it in and send it into the Aire; and it will represent divers Figures Delightfull to the Spectators.

8. *How to make the flying Saucisson: as also Guns to cast them into the Aire.*

As for the Cartoushe of the flying Saucisson, it must be made like that of the other, but somewhat longer; and the Composition must be mostly Corned-Pouder, only as much Dust-Pouder as will continue fire till it is mounted at it's hight, leaving a hole in choaking, for the Port-Fire, as big as a Goose-Quill, filling them in the same manner as the former.

To

To make Pastbord-Guns, you must take the same measure as in making the Mortar, only they must be less in the Calliber or Bore ; and their Touch-holes at their bottoms, by reason they must be placed upon a plank or board in a row with their mouths upward. And thus much for Artificial Fire-Works, in order to Recreation, with which I will close this Book. Hoping it will give Ample Satisfaction to the Impartial Reader.

FINIS.

A Table of severall Diseases
incident to the Oxe or
Cow, with relation to
the Printed Cut or Por-
traiture of an Oxe in the
1 Page of this Book.

1. **D**iseases in the Horn, or Wearied
Horns.
2. Scaled Horns.
3. Split Horns.
4. Broken Horns.
5. Hairs standing upright.
6. Lice or Ticks.
7. Scab, Itch, or Mange.
8. Eating Sore in the Neck.
9. Aposthumes.
10. Boils or Mattering Ulcers.
11. Hide-bound on the Legs.
12. Hide-bound on the Rib.
13. Bewitched.
14. Head-ach, or Pain in the Head.
15. Humour or Rheum.
16. Swollen Eyes.
17. Weeping Eyes.

18. Running

18. *Running Eyes.*
19. *Sharp Tears.*
20. *Mattering Eyes.*
21. *Dark Eyes.*
22. *Nail of the Eyes.*
23. *Spots or Webs in the Eyes.*
24. *White on the Eye.*
25. *Warr upon the Eye-lids.*
26. *Falling of the Pallate, or Swollen
Pallate.*
27. *Cleft or Split Tongue.*
28. *Knobs under the Tongue.*
29. *Carnils under the Tongue.*
30. *Swelling in the Throat.*
31. *To prevent Imposthumes in the Neck.*
32. *The Neck Bruised.*
33. *The Neck deprived of Skin.*
34. *The Neck deprived of Hair.*
35. *Hardened Neck.*
36. *Swollen Neck.*
37. *Shoulder out of Joynt.*
38. *Crumpled or Shrunkin Soulder.*
39. *Diseases in the Lungs.*
40. *The same.*
41. *Cough.*
42. *Difficult Taking of Breath.*
43. *Slow or Lasie.*
44. *Weariness.*
45. *Ague.*
46. *Beating*

46. *Beating of the Heart.*
47. *Stomach lost.*
48. *Horse-leece Swallowed down.*
49. *Swallowing of Grubs.*
50. *Dublone.*
51. *Pain of the Belly.*
52. *Gripping in the Guts (Cholick.)*
53. *Obstructions, or Opilation.*
54. *Loosness and Bloody-Flux.*
55. *Spoiled Arse-Guts.*
56. *Pain of the Loins.*
57. *Pain of the Reins, Inflammation.*
58. *Inflammation of Muscles.*
59. *Pissing of Blood.*
60. *Unableness of making Water.*
61. *Stone of the Bladder.*
62. *Stone of the Yard.*
63. *Hardened Yard.*
64. *Swollen Cods.*
65. *Limping or Lamé.*
66. *Leg out of Joynt, or Wrinched.*
67. *Broken Leg.*
68. *Biting of Serpents.*
69. *Stinging of the Hornet.*
70. *Kibe on the Heel.*
71. *Swollen Foot.*
72. *Crumped Foot.*
73. *Foot out of Joynt, or wrinched Foot.*
74. *Wounded Foot.*

75. *Wounded*

- 75. Wounded Claw.
 - 76. Broken Claw.
 - 77. Loose Claw.
 - 78. Claw fallen off.
-

A Table of severall Diseases
incident to Horses, Mares,
Colts, &c. With relation
to the Printed Cut or Por-
traiture of an Horse in
the 34 Page of this Book.

- 1 **T**HE Head-Ach, Staggers, or Mad-
ness,
- 2 Mad, or Raging Love.
- 3 Coldness, or Chilness in the Head.
- 4 Rhume, Catarh, Glanders, or Running of
the Nose.
- 5 Pin in the Eye.
- 6 Web in the Eye.
- 7 Watring of the Eyes.
- 8 Pain in the Eyes.
- 9 Sore or Wounded Eyes.
- 10 Eye-Scars.

11 Worms

- 11 *Worms in the Nose.*
- 12 *Tooth-Ach.*
- 13 *Canker in the Mouth or Tongue.*
- 14 *Want of Palat.*
- 15 *Fever or Plague.*
- 16 *Squinacy, or Swelling in the Throat.*
- 17 *Waxing-Kernel, Struma, Choaking, or
the Strangles.*
- 18 *Distemper of the Neck.*
- 19 *Galled Neck.*
- 20 *Crik in the Neck.*
- 21 *Distempers of the Lungs.*
- 22 *Short-windedness, or Pursiveness.*
- 23 *Cough.*
- 24 *Ulcers, or Aposthumes of the Breast.*
- 25 *Faintness.*
- 16 *Over-heated.*
- 27 *Ague.*
- 28 *Venemous Creatures swallowed.*
- 29 *Stomach or Appetite lost.*
- 30 *Henn-dung swallowed.*
- 31 *Colick or Gripping in the Gut.*
- 32 *Belly-Ach.*
- 33 *Obstruction in the Arse-Gutts.*
- 34 *Folling of the Fundament.*
- 35 *Wormes.*
- 36 *Flux, or looseness of the Body.*
- 37 *Bloody-Flux.*
- 38 *The Yellow-Jaundise.*

39 *Stopping*

- 39 Stopping of the Urine.
- 40 Difficulty of making Water.
- 41 Strangury.
- 42 Wolf, or over-growing of the Flesh.
- 43 Rupture prevented.
- 44 Rupture cured.
- 45 Biting of the Spider-Mouse.
- 46 Swelling of the Cods.
- 47 Warts.
- 48 Chaps in the Feet.
- 49 Old Wounds, or Swelling in the Back.
- 50 Bruised-Back.
- 51 Galled-Back.
- 52 Biting of Flyes.
- 53 To drive away the Flyes.
- 54 Stiffness in the Joynts.
- 55 Broken-Loyns.
- 56 Swelling of the Flanks.
- 57 Scabby or Mangy.
- 58 Wrecking of the Sinews.
- 59 Swelling of the Knees.
- 60 Knees cleft and Broken.
- 61 Over-growing of the Knee-pan.
- 62 Farcions, Farcy or Leprosy of the Legs
or elsewhere.
- 63 Chops between the Joynts and Legs.
- 64 String-hall.
- 65 Mallender.
- 66 Spavin.
- 67 Biting

- 67 *Biting of a Mad-Dog.*
 - 68 *Biting of Water-Snakes.*
 - 69 *Ring-bone.*
 - 70 *Fistula.*
 - 71 *Over-growing of the Hoof.*
 - 72 *Figg.*
 - 73 *Foundred.*
 - 74 *Prickt with a Nail.*
 - 75 *Limping or Halting.*
 - 76 *The Shee-Wolf, or Boyls and Knobs on
the Foot.*
 - 77 *Scratches.*
 - 78 *Over-reaching.*
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A Table of severall Diseases
incident to Sheep, with
relation to the Printed
Cut or Portraiture of a
Ship in the 78 Page of
this Book.

- 1. **H***Ead-ach.*
- 2. *Giddiness.*
- 3. *Loss of Cud.*
- 4. *Diseases in the Eyes.*

5. *Ague*